

# **PAC-MAN BATTLE ROYALE**

## **OPERATION MANUAL**

The actual product may differ slightly from the illustrations in this manual.

### **WARNING**

- To ensure safe operation of the game machine, be sure to read this Operation Manual before use.
- Keep this Operation Manual in a safe place for quick access whenever needed.

# INTRODUCTION

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Thank you for purchasing the “PAC-MAN BATTLE ROYALE” game machine (hereinafter referred to as the “machine”).

This operation manual describes:

- How to install, operate, relocate, transport, service, and discard the machine safely and properly
- How to operate the machine correctly and make full use of its features
- How to ensure the safety of players and bystanders

Inquiries regarding this machine and its repair

- For further information about the machine and its repair, contact your distributor.

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This machine uses the following licenses.

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# 1. SAFETY PRECAUTIONS – Be sure to read this section before installing or operating the machine. –


## Instructions to the owner

- If you entrust another party to perform installation, operation, relocation, transportation, service, or discarding of the machine, instruct the concerned party to read and observe all the instructions and precautions in this operation manual regarding the particular action to be taken.

## 1-1 Magnitudes of risk

On the labels attached to the machine and in this operation manual, precautions regarding safety and property damage are classified as shown below in accordance with the magnitude of the particular risk.

 **WARNING** : Failure to avoid the indicated risk may result in death or serious injury.

 **CAUTION** : Failure to avoid the indicated risk may result in minor injury or property damage.

Notes related to machine functions but not to safety are marked with the following indication.



- Note related to product function or protection.

## 1-2 Definition of “technician”

This operation manual is written for arcade personnel. However, the sections marked “To be conducted by a technician only” in the table of contents are written for technicians. These tasks should be conducted by technicians only.

**Technician:** A person engaged in machine design, manufacture, inspection or service for a manufacturer of amusement equipment, or a person who has technical knowledge related to electricity, electronics or mechanical engineering at a level equal to or higher than that of a technical high school graduate and who is engaged routinely in the service and management (including repair) of amusement machines.

## 1-3 Critical safety precautions

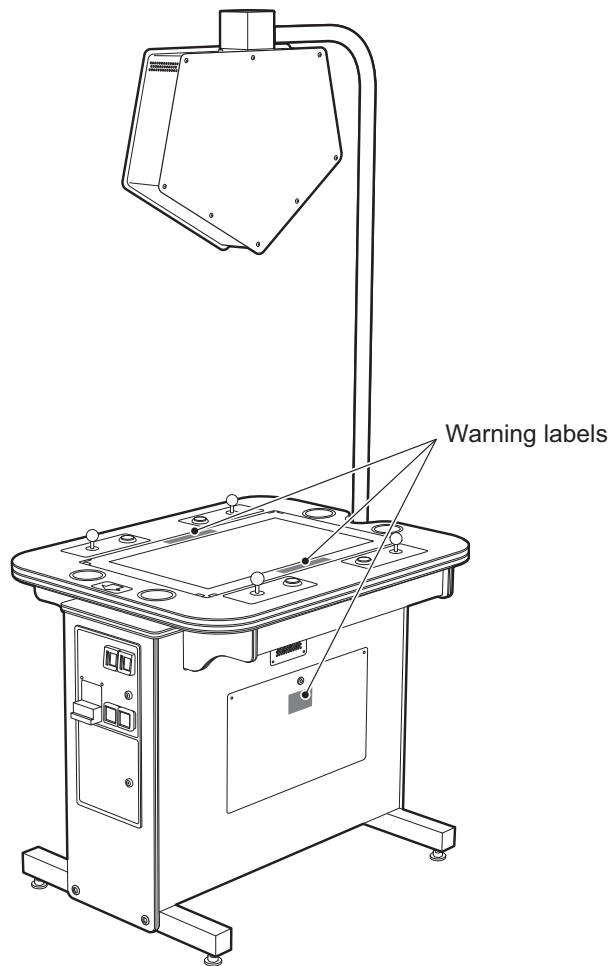
### WARNING

- Should any abnormality occur, turn off the power switch immediately to stop operating the machine. Then, unplug the power cord plug from the AC outlet. Operating the machine without correcting abnormalities can result in a fire or accident.
- Some monitor sections remain hot or charged with high voltage even after the power switch is turned off. Do not touch the monitor unnecessarily in order to avoid electric shock and burns.
- Dust accumulated on the power cord plug may cause a fire. Check the power cord plug regularly and remove dust.
- Insert the power cord plug firmly into the AC outlet. Poor contact may cause overheating that can lead to a fire or burns.
- A damaged power cord can cause a fire, electric shock or electrical leakage. Observe the following cautions.
  - Keep the power cord away from heating devices.
  - Do not twist the power cord.
  - Do not bend the power cord forcibly.
  - Do not alter the power cord.
  - Do not bundle the power cord.
  - Do not pull the power cord. (Always unplug by holding the power cord plug, and avoid pulling the power cord.)
  - Do not place anything on the power cord.
  - Do not allow the power cord to be caught under or between the machine, other equipment or the wall.
  - Do not do anything else that might damage the power cord.
- Do not wet the power cord or power cord plug with water. Water can cause an electric shock or electrical leakage.
- Do not touch the power cord plug with a wet hand. Doing so can result in an electric shock.
- The machine's rated power supply voltage and maximum consumption current are 120 V AC, 2 A, respectively. To prevent fire and electric shock, be sure to use interior wiring that conforms to these power supply specifications.
- Operate the machine with a power supply voltage in the range of 104 to 127 V AC. Operating the machine with a supply voltage outside the specified range may cause a fire or electric shock. To ensure that the machine operates in optimum condition, maintain the power supply at 120 V AC.
- To ensure safe operation of the machine, be sure to conduct the pre-service check (See P. 15 "7-1 Pre-service check") and service (See P. 44 "8B. SERVICES") described in this manual. Failure to conduct the pre-service check or service can result in an accident.
- Use consumables and service parts (including fasteners) specified by our company. To order parts, contact your distributor.
- Do not convert the machine without permission. Do not perform any work that is not described in this operation manual. Unauthorized conversion of the machine may create unforeseen hazards.
- When transferring ownership of the machine, be sure to provide this operation manual with the game machine.

## 1-4 Description of warning labels attached to the machine

### WARNING

- The warning labels describe important safety precautions. Be sure to observe the following:
  - To ensure that the warning labels attached to the machine are easily legible, install the machine at an appropriate location with ample illumination and keep the labels clean at all times. Also, make sure that the labels are not hidden behind another game machine or other objects.
  - Do not remove or alter the warning labels.
  - If the warning labels become excessively dirty or damaged, replace them with new labels. To order warning labels, contact your distributor.



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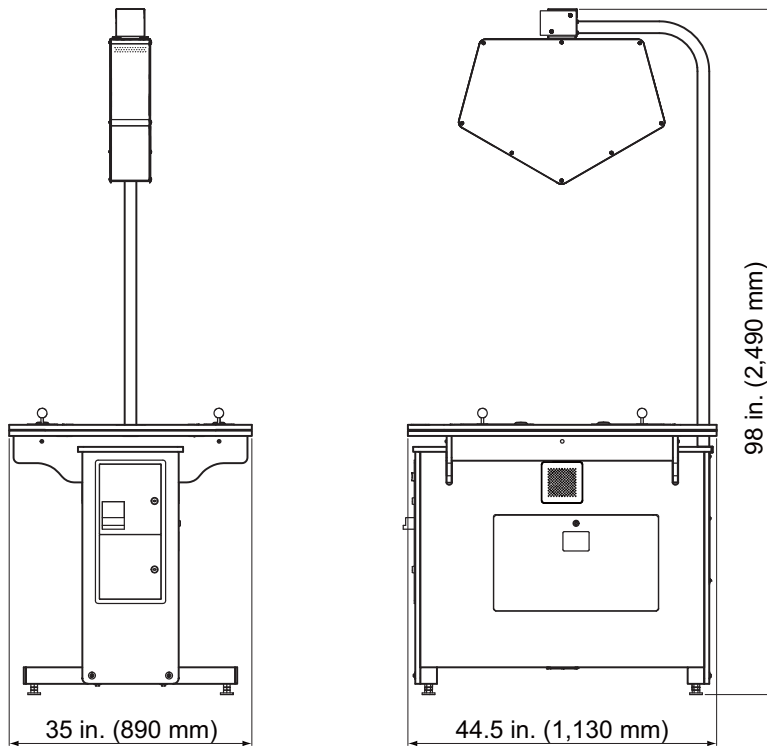
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## 2. SPECIFICATIONS

- |                                  |   |
|----------------------------------|---|
| (1) Rated power supply:          | 120 ± 10% V AC (60 Hz)                                  |
| (2) Maximum power consumption:   | 190 W   |
| (3) Maximum current consumption: | 1.58 A (120 V AC power supply)                          |
| (4) Coin box capacity:           | Approx. \$750 in coins (3,000 25-cent coins)            |
| (5) Display device:              | LCD monitor (32-inch screen)                            |
| (6) Dimensions                   |   |
| ① As installed:                  | 35 x 44.5 x 98 in. (890 x 1,130 x 2,490 mm) (W x D x H) |

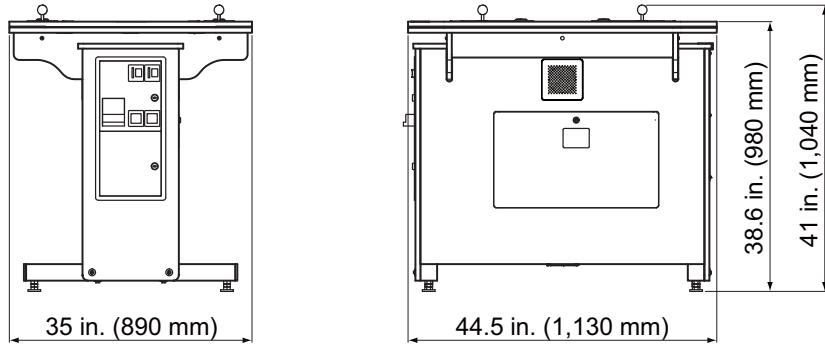




② When divided

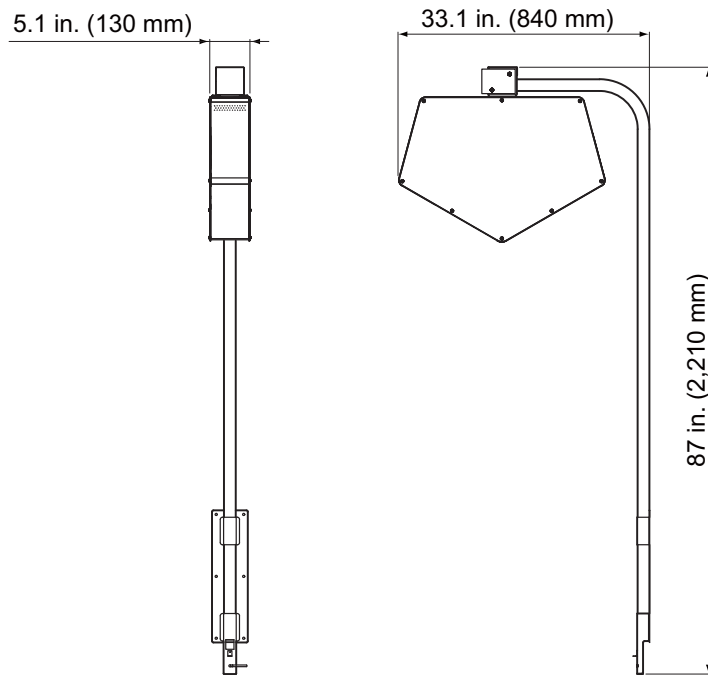
● Cabinet:

35 x 44.5 x 38.6 in. (890 x 1,130 x 980 mm) (W x D x H)



● Signboard assembly:

5.1 x 33.1x 87 in. (130 x 840 x 2,210 mm) (W x D x H)



(7) Weight

① As installed:

Approx. 286.6 lb. (130 kg)

② When divided

● Cabinet:

Approx. 242.5 lb. (110 kg)

● Signboard assembly:

Approx. 35.3 lb. (16 kg)

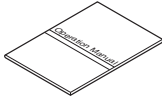


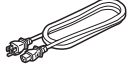



### 3. PACKAGE CONTENTS

The product packages shipped from the factory contain the following components and parts.



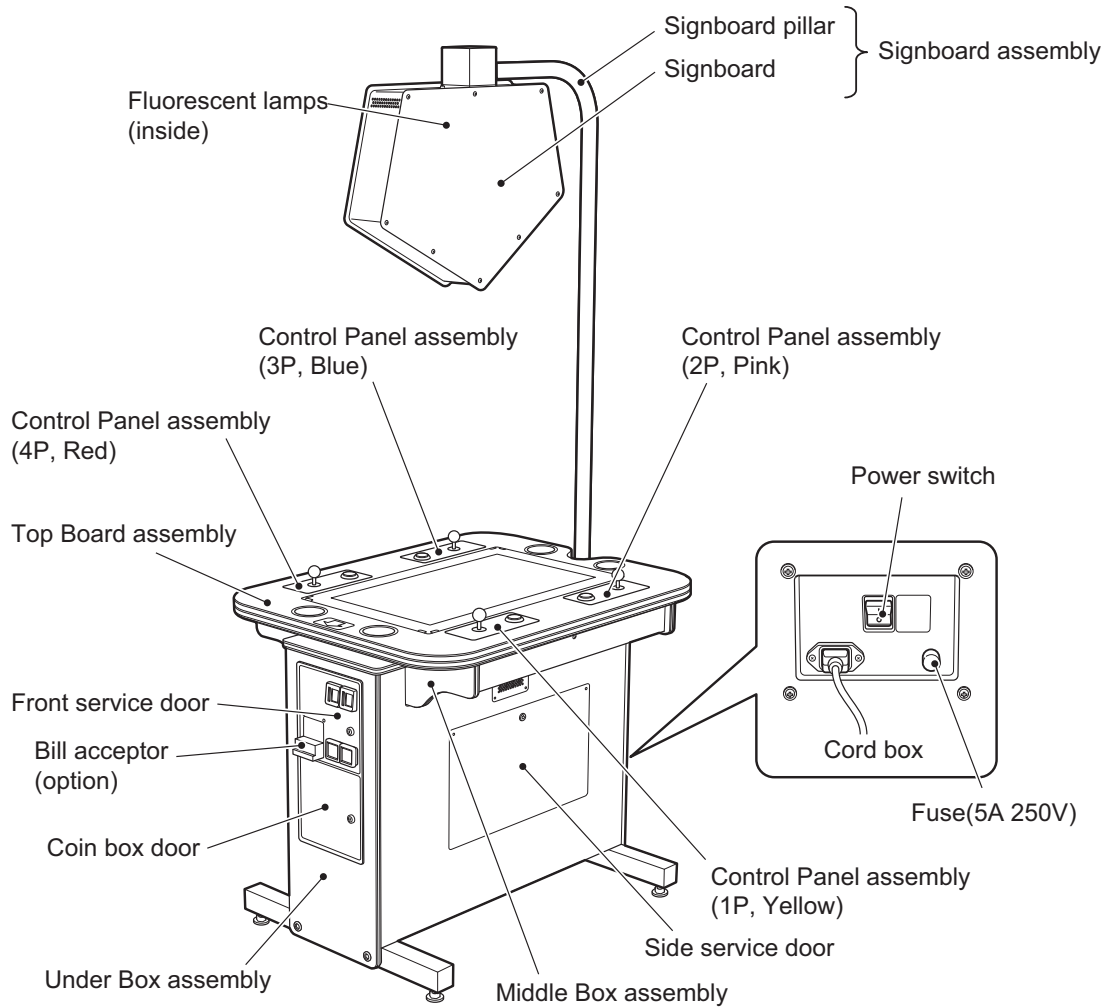
- Make sure that all the items listed below (except the service key) are contained in the coin box.
- If any item is missing, contact your distributor.

#### ■ Accessory list

No.	Name	Specification	Qty.
1	Operation Manual		1
2	Service key		2
3	Coin box key		2
4	Power cord		1
5	Hex flange bolt	M6 x 12 (For signboard) 	4
6	Button head bolt	M6 x 30 (For signboard pillar) 	6
7	Flat washer	M6 (For signboard pillar) 	6

## 4. OVERALL CONSTRUCTION (Names of Parts)

### ■ Front



## 5. INSTALLATION

---

### WARNING

- Install the machine according to the instructions and procedures specified in this operation manual. Failure to follow the specified procedures may result in a fire, electric shock, injury or machine malfunctions.
- Insert the power cord plug firmly into the AC outlet. Poor contact may cause overheating that can lead to a fire or burns.
- Install the machine securely by using the level adjusters. Unstable machine installation can result in an accident or injury. (See P. 36 “8A-1-1 Securing the machine using level adjusters.”)

### 5-1 Installation conditions

#### 5-1-1 Locations to avoid when installing the machine

### WARNING

- The machine is designed for indoor use. Never install the machine outdoors or in any of the following places:
  - A place subject to direct sunlight
  - A place exposed to rain or water leakage
  - Damp place
  - Dusty place
  - A place close to heating devices
  - Hot place
  - Extremely cold place
  - A place where dew condensation may occur due to temperature differences
  - A place where the machine may become an obstruction in emergencies (such as near an emergency exit) or a place where a fire extinguisher or similar equipment is installed
  - Unstable place or location where vibrations are produced

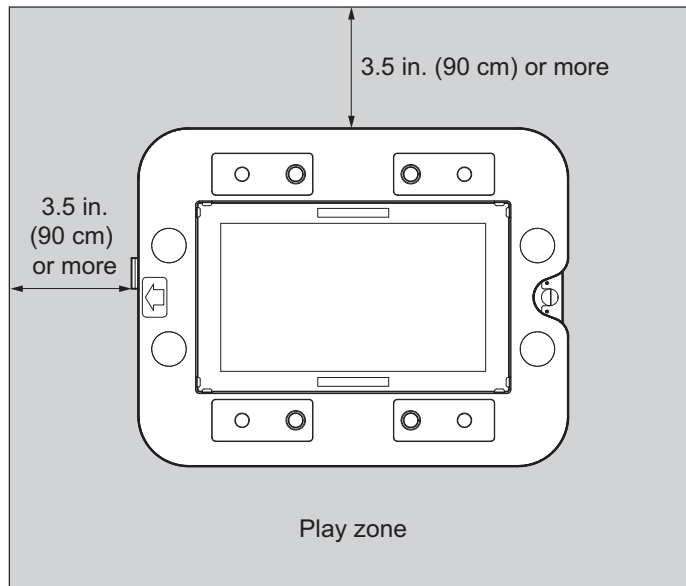
### 5-1-2 Play zone for installed machine

## ⚠ WARNING

- Create a play zone around the machine (space as shown below) to prevent players coming into contact with bystanders or passers-by.



- The distance from the floor to the ceiling must be at least 10.6 in. (2 m 70 cm).



### 5-2 Required dimensions for bringing the machine inside (such as doors and corridors)

The machine is divided into separate components at the factory before shipping. The dimensions of main components are as follows:

- As installed:  
35 x 44.5 x 98 in. (890 x 1,130 x 2,490 mm) (W x D x H)  
Weight: Approx. 286.6 lb. (130 kg)
- Without Signboard assembly:  
35 x 44.5 x 38.6 in. (890 x 1,130 x 980 mm) (W x D x H)  
Weight: Approx. 242.5 lb. (110 kg)

Doors and corridors must be sufficiently higher and wider than the dimensions indicated above.

Regarding the method of attaching the signboard assembly to the Under Box assembly, see "8A-1-3 (1) Attaching the signboard pillar."

## 6. MOVING AND TRANSPORTING

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### WARNING

- Do not leave the machine on a slope. If the machine is left on a slope, it may tip over and cause an accident.

### 6-1 Moving (on the floor)



#### NOTICE

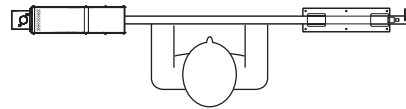
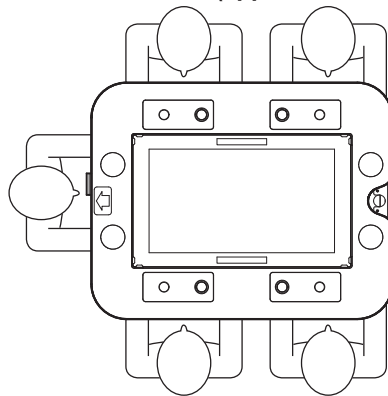
- Carefully transport the machine so as not to cause excessive impacts to it, as the LCD monitor is a precision electronic component.

## 6-2 Transportation

### 6-2-1 Manual transportation (carrying on stairs, etc.)

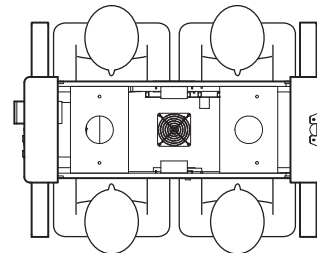
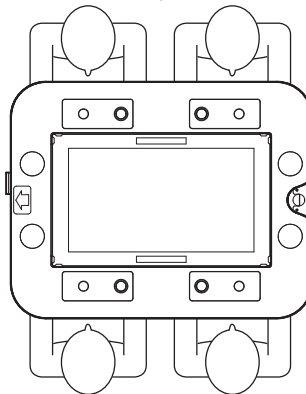
#### WARNING

- This machine weighs approximately 286.6 lb. (130 kg).
- When carrying the machine manually, be sure to remove the Signboard assembly from the machine, and raise all the level adjusters all the way (See P. 36 “8A-1 Assembly.”) Attempting to carry the machine manually (over stairs, etc.) without removing the Signboard assembly as described above can result in an accident.
- If a corridor is narrow, separate the machine into parts. (See P. 11 “5-2 Required dimensions for bringing the machine inside (such as doors and corridors).”)
- When carrying the machine manually, the following number of people are needed. Attempting to carry the machine with fewer people can result in an accident or injury.
  - Machine without Signboard assembly:  
(approx. 286.6 lb. (130 kg)): 5 people or more
  - Signboard assembly:  
(approx. 35.3 lb. (16 kg)): 1 person or more



[When divided]

- Middle Box and Top Board assemblies:  
(approx. 110.2 lb. (50 kg)): 4 people or more
- Under Box assembly:  
(approx. 132.3 lb. (60 kg)): 4 people or more



NOTICE

- Do not drop the machine when lowering it.
- Be sure to transport the machine with great care to avoid damaging it.

## 7. OPERATION

---

### **WARNING**

- Some monitor sections remain hot or charged with high voltage even after the power switch is turned off. Do not touch the monitor unnecessarily in order to avoid electric shock and burns.
- Dust accumulated on the power cord plug may cause a fire. Check the power cord plug regularly and remove dust.
- Insert the power cord plug firmly into the AC outlet. Poor contact may cause overheating that can lead to a fire or burns.
- Be sure to check that the machine has been installed according to the instructions and procedures specified in this operation manual (See P. 10 "5. INSTALLATION.") before operating the machine. If the machine is not installed properly, fire, electric shock, injury or equipment malfunction can occur.
- The warning labels describe important safety precautions. Be sure to observe the following:
  - To ensure that the warning labels attached to the machine are easily legible, install the machine at an appropriate location with ample illumination and keep the labels clean at all times. Also, make sure that the labels are not hidden behind another game machine or other objects.
  - Do not remove or alter the warning labels.
  - If the warning labels become excessively dirty or damaged, replace them with new labels. To order warning labels, contact your distributor.
- To ensure safe operation of the machine, be sure to conduct the pre-service check (see P. 15 "7-1 Pre-service check") and Service (see P. 44 "8B. SERVICES") described in this manual. Failure to conduct the pre-service check or service can result in an accident.

### **CAUTION**

- If a player becomes sick due to light stimulation or game images, have that person stop playing the game immediately and let him/her rest.
- In rare cases, stimulation by lights or video images can cause convulsions or a loss of consciousness. If this happens, advise the player to consult a doctor as soon as possible. When pre-school children play, request their parents or guardians to keep an eye on the children.



## 7-1 Pre-service check

### 7-1-1 Safety check (before power ON)

#### **WARNING**

- To prevent accidents and injury, be sure to conduct the pre-service check described below before commencing operation.

- (1) Are all warning indications in place? (See P. 3 “1-4 Description of warning labels attached to the machine.”)
- (2) Are the warning indications legible? (See P. 3 “1-4 Description of warning labels attached to the machine.”)
- (3) Are all level adjusters adjusted properly? (See P. 36 “8A-1-1 Securing the machine using level adjusters.”)
- (4) Is the specified play zone provided? (See P. 11 “5-1-2 Play zone for installed machine.”)
- (5) Is the power cord routed so that it will not cause players or other customers to trip over it?
- (6) Is the power cord securely connected to the AC outlet and the power input socket on the machine?
- (7) Is the power cord plug free of dust?
- (8) Is the signboard pillar securely attached to the Under Box assembly? (See P. 37 “8A-1-3 (1) Attaching the signboard pillar.”)
- (9) Is the signboard securely attached to the signboard pillar? (See P. 39 “8A-1-3 (2) Attaching the signboard.”)
- (10) Is the under box side cover securely attached to the Under Box assembly? (See P. 37 “8A-1-3 (1) Attaching the signboard pillar.”)

Check the following items after turning on the power switch. If an abnormality is found, turn off the power switch immediately to stop operating the machine. Then, unplug the power cord from the AC outlet and contact your distributor.

- (11) Is any part of the power cord or plug abnormally hot?
- (12) Does touching the machine give an electric shock?
- (13) Is there a burning smell, abnormal noise or vibration?
- (14) Is there any other sign of abnormality or malfunction?

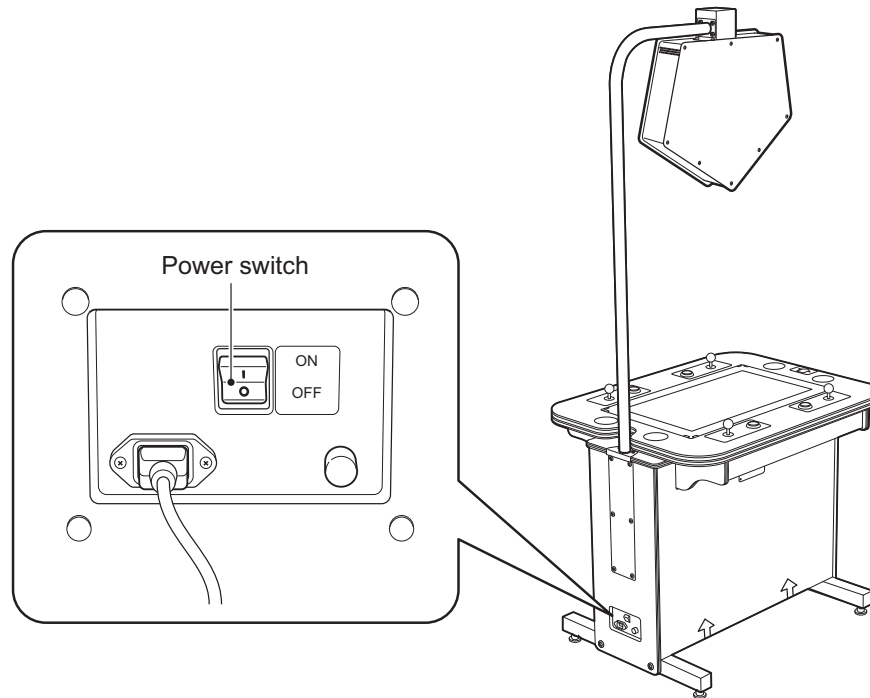
### 7-1-2 Operation check (after power ON)

Check the following items in Test mode. (See P. 18 "7-2-2 Adjustment switches and buttons.")

- (1) Check the lamps for proper operation. (Do the fluorescent bulb and Start buttons light?)  
(See P. 25 "7-4-4 Switch/sensor test (I/O TEST).")
- (2) Check the Start buttons for proper operation.  
(See P. 25 "7-4-4 Switch/sensor test (I/O TEST).")
- (3) Check the displayed image. (Does the monitor show images properly?)  
(See P. 28 "7-4-5 Monitor condition (MONITOR TEST).")
- (4) Check the sound. (Is sound produced by each loudspeaker?)  
(See P. 29 "7-4-6 Sound adjustment (SOUND TEST).")
- (5) Check the clock.  
(See P. 33 "7-4-8 (1) CLOCK SETTING.")

## 7-2 Explanation of the power switch and adjustment switches

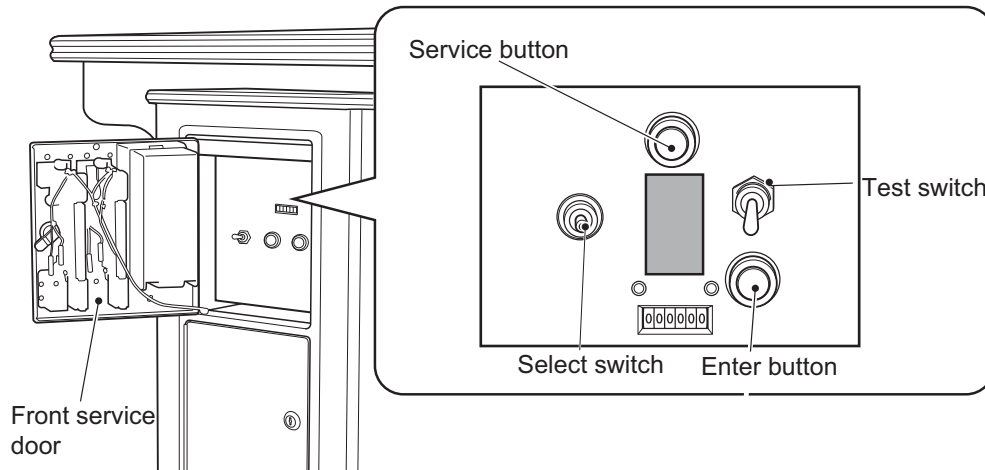
### 7-2-1 Turning the power switch on



- Be sure to complete the installation and setup of the machine before turning the power switch on.
- When turning the power switch on or off, wait at least 30 seconds between switch operations. Do not repeat turning the power switch on and off unnecessarily. Repeated on/off operations can cause damage to the data in the backup memory.

### 7-2-2 Adjustment switches and buttons

Open the front service door to gain access to the adjustment switches and buttons.



#### Test switch

Set this switch to ON to activate Test mode. Test mode is used to test the monitor and other parts. (See P. 21 "7-4 Test mode.")

#### Service button (red)

Press this button to increase the credit count without activating the coin counter.

#### Enter button (green)

After selecting an item or setting (a numeric value) using the Select switch, press this button to enter or execute the selection.

#### Select switch

In Test mode, flip this switch up or down to select an item or setting (a numeric value).

---

## 7-3 How to play PAC-MAN BATTLE ROYALE

### 7-3-1 Game rules

- Up to four players can battle together.
- If your Pac-Man has eaten a power pellet, he can eat other players' Pac-Men.
- The last one standing wins the round.
- Multiple rounds can be played per battle royale.

### 7-3-2 How to control your Pac-Man

Move your Pac-Man through the maze by moving your joystick up, down, left, and right.

### 7-3-3 Items and a strategy in the maze

#### Pac-dot

The pac-dot pattern is refreshed when all pac-dots have been eaten.

#### Food

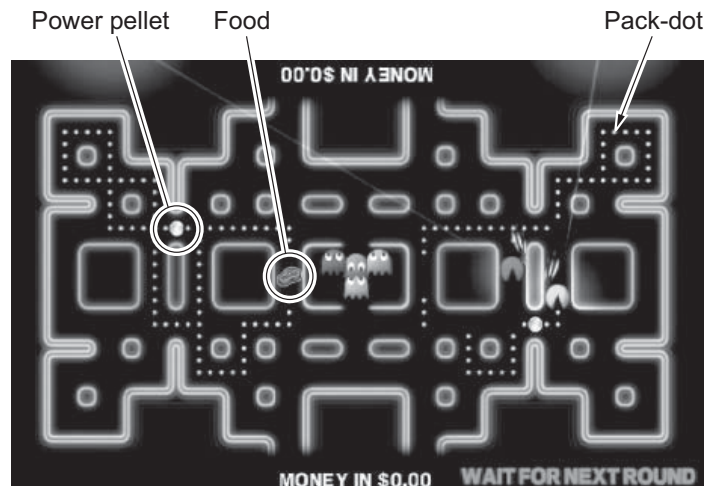
The pac-dot pattern is refreshed when food is eaten, even if some pac-dots remain.

#### Power pellet

When a Pac-Man eats a power pellet, he grows larger and other Pac-Men turn blue. The large Pac-Man can devour other blue Pac-Men.

#### Takeouts

When two equally-sized Pac-Men bump into each other, they bounce off of each other. To kill an opposing Pac-Man, bump your Pac-Man into it and knock it against a ghost. (Note that Pac-Men do not bump or pass through each other when they are blue.)



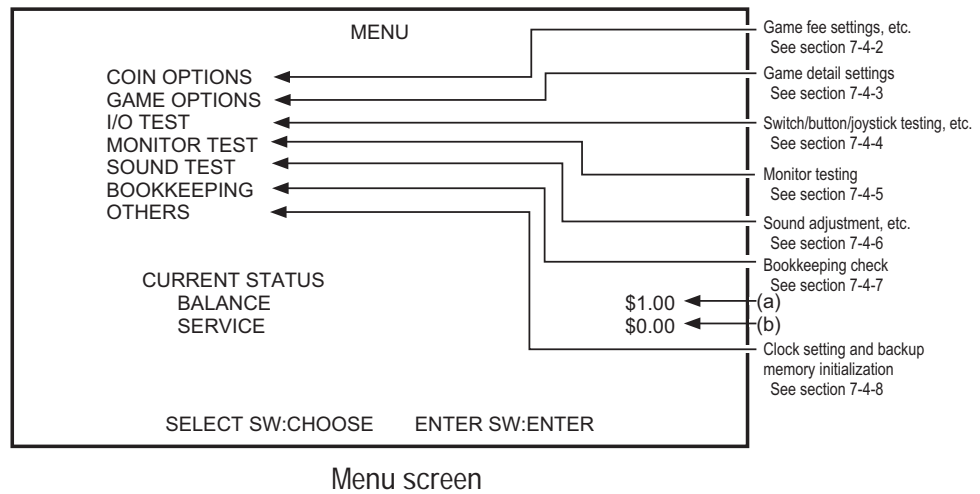
#### 7-3-4 START button

- If any credits remain when you press the START button, you can start playing the game.
- When you press the START button during a game in progress (group play), you (a maximum of four players) can participate in the first available round of play.  
(Note that this function is not available during the final round or in single mode.)
- When you (winner or loser) press the START button during intermission (while Winner is displayed), you can throw paint bombs at the loser (for winner) or winner (for loser) to taunt your opponent(s).  
(In solo play, the game proceed directly to the next round of play.)

## 7-4 Test mode

### 7-4-1 Description of the menu screen (MENU)

- 1** Unlock the front service door and set the Test switch to ON. (See P. 18 “7-2-2 Adjustment switches and buttons.”)  
The Menu screen appears on the monitor.



Item	Description
(a) BALANCE	Amount of money inserted before starting test mode.
(b) SERVICE	The amount for service games provided before starting test mode.

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection. Applicable items under the selection appear.
- 4** After all settings are complete, set the Test switch to OFF. The game display returns to the screen.

## 7-4-2 Game fee settings (COIN OPTIONS)

This screen is used to set the game fee, free play, and other options.

- 1** Select "COIN OPTIONS" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")  
The Coin Options screen appears on the monitor.

COIN OPTIONS DEFAULT IN GREEN	
GAME COST	\$2.00 ← (a)
FREE PLAY	OFF ← (b)
PLAY TYPE	GROUP ← (c)
CURRENCY	DOLLAR ← (d)
VALUE OF MECHANICAL COUNT	\$0.25 ← (e)
VALUE OF COIN 1	\$0.25 ← (f)
VALUE OF COIN 2	\$0.25
VALUE OF COIN 3/BILL PULSE	\$0.25
EXIT	
SELECT SW:CHOOSE    ENTER SW:ENTER	

Coin Options screen

Item	Description	Factory settings
(a) GAME COST	Sets the game cost A value range varies depending on the currency. DOLLAR: \$ 0.25 to \$ 25.0 POUND: £ 0.10 to £ 10.0 £ 0.20 to £ 20.0 £ 0.50 to £ 50.0 £ 1 to £ 100 £ 2 to £ 200 EURO: € 0.10 to € 10.0 € 0.20 to € 20.0 € 0.50 to € 50.0 € 1 to € 100 € 2 to € 200 COIN: 1 to 100	\$ 2.00
(b) FREE PLAY	Turns Free Play on or off ON/OFF	OFF
(c) PLAY TYPE	Sets the play type GROUP: Up to four people can play during one play. SINGLE: A game fee required for each player.	GROUP
(d) CURRENCY	Sets the currency DOLLAR/POUND/EURO/COIN	DOLLAR



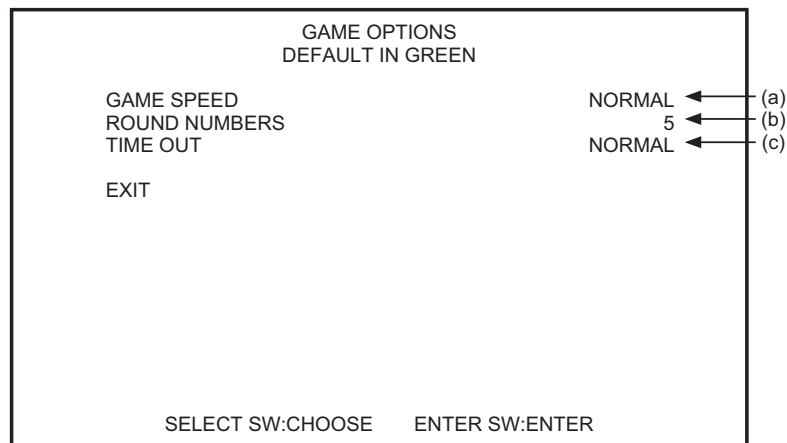
Item	Description	Factory settings
(e) VALUE OF MECHANICAL COUNT	<p>Sets the incremental value of the coin counter</p> <p>The value range varies depending on the currency.</p> <p>DOLLAR: \$ 0.25 (fixed value)</p> <p>POUND: £ 0.10/£ 0.20/£ 0.50/£ 1/£ 20</p> <p>EURO: € 0.10/€ 0.20/€ 0.50/€ 1/€ 20</p> <p>COIN: 1 (fixed value)</p> <p>Each time the service button is pressed, the preset credit value increases in increments.</p>	\$ 0.25
(f) VALUE OF COIN 1 (Settings for VALUE OF COIN 2 and VALUE OF COIN 3/BILL PULSE are the same.)	<p>Sets the pulse input weighting for a coin selector or bill acceptor connected to COIN UNIT 1</p> <p>(As the input pulse value varies depending on the connected equipment, be sure to set the appropriate value.)</p> <p>The value range differs depending on the currency.</p> <p>DOLLAR: \$ 0.25 to \$ 25.0</p> <p>POUND: £ 0.10 to £ 10.0 £ 0.20 to £ 20.0 £ 0.50 to £ 50.0 £ 1 to £ 100 £ 2 to £ 200</p> <p>EURO: € 0.10 to € 10.0 € 0.20 to € 20.0 € 0.50 to € 50.0 € 1 to € 100 € 2 to € 200</p> <p>COIN: 1 to 100</p>	\$ 0.25

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection.
- 4** Flip the Select switch up or down to change the setting, and then press the Enter button to enter the change. The display returns to the previous selection screen.
- 5** To return to the Menu screen, select "EXIT" and press the Enter button.

### 7-4-3 Game detail settings (GAME OPTIONS)

This screen is used to set the game details.

- 1** Select "GAME OPTIONS" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")  
The Game Options screen appears on the monitor.



Game Options screen

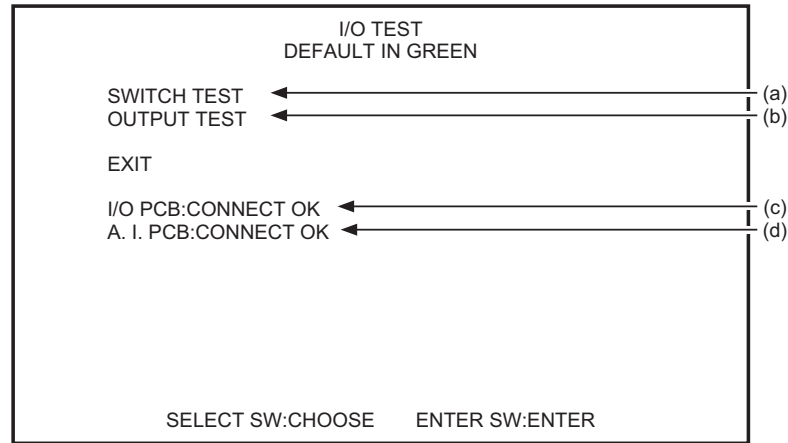
Item	Description	Factory settings
(a) GAME SPEED	Sets the game speed FAST/NORMAL/SLOW	NORMAL
(b) ROUND NUMBERS	Sets the available round number. 3 to 9	5
(c) TIME OUT	Sets the time-out duration for one round. LONG/NORMAL/SHORT	NORMAL

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection.
- 4** Flip the Select switch up or down to change the setting, and then press the Enter button to enter the change. The display returns to the previous selection screen.
- 5** To return to the Menu screen, select "EXIT" and press the Enter button.

### 7-4-4 Switch/sensor test (I/O TEST)

This screen is used to test the functions of the switches on the machine.

- 1** Select "I/O TEST" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")  
The I/O Test screen appears on the monitor.



I/O Test screen

Item	Description
(a) SWITCH TEST	Proceeds to the Switch Test screen (See P. 26 "7-4-4 (1) SWITCH TEST.")
(b) OUTPUT TEST	Proceeds to the Output Test screen (See P. 27 "7-4-4 (2) OUTPUT TEST.")
(c) I/O PCB	Checks the I/O PCB connection. CONNECT OK (success) CONNECT NG! (failure)
(d) A. I. PCB	Checks the A. I. PCB connection. CONNECT OK (success) CONNECT NG! (failure)

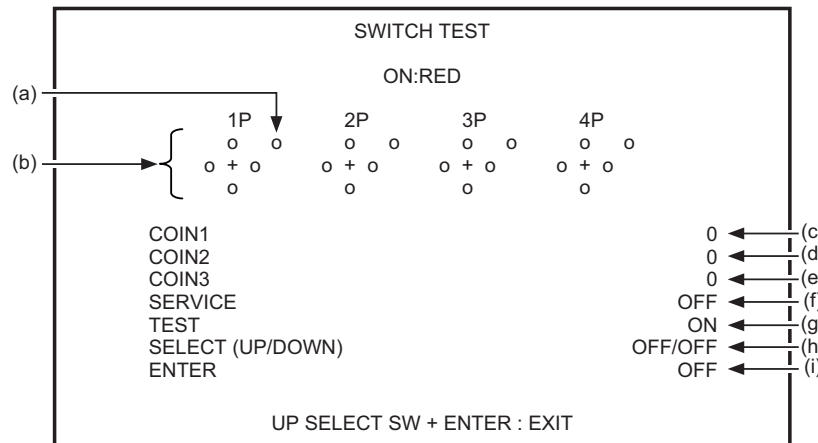
- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to go to the screen under the selection.
- 4** To return to the Menu screen, select "EXIT" and press the Enter button.

## (1) SWITCH TEST

This screen is used to test the respective switch functions.

- 1** Select "SWITCH TEST" in the "I/O TEST" screen and press the Enter button. (See P. 25 "7-4-4 Switch/sensor test (I/O TEST).")

The Switch Test screen appears on the monitor.



Switch Test screen

Item	Description
(a) Check indicator for the illuminated switch on the 1P Control Panel assembly	While the illuminated switch is pressed and held, the indicator lights in red. (Indicators for 2P thru 4P function as well.)
(b) Check indicators for the joystick on the 1P Control Panel assembly	While the joystick is tilted and held in a certain direction, the indicator corresponding to that direction lights in red. (Indicators for 2P thru 4P function as well.)
(c) COIN 1	Each time a coin switch on coin unit 1 is activated, the value increases by increments of one. When the value exceeds 255, the value is reset to zero. Note that the coin counter synchronizes to this test option.
(d) COIN 2	Each time a coin switch on coin unit 2 is activated, the value increases by increments of one. When the value exceeds 255, the value is reset to zero. Note that the coin counter synchronizes to this test option.
(e) COIN 3	Each time a coin switch on coin unit 3 is activated, the value increases by increments of one. When the value exceeds 255, the value is reset to zero. Note that the coin counter synchronizes to this test option.
(f) SERVICE	While the Service button is pressed and held, the value is "ON." (Note that the credit value does not increase during test mode.)
(g) TEST	While the Test switch is set to "ON", the value is "ON." (Note that the value is "ON" during test mode.)
(h) SELECT (UP/DOWN)	While the Select switch is tilted and held up, the value is "ON/OFF." While down, the value is "OFF/ON."
(i) ENTER	While the Enter button is pressed and held, the value is "ON."

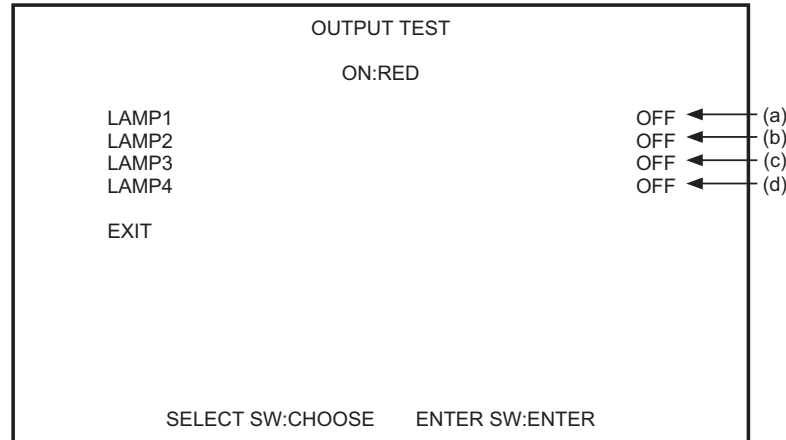
- 2** Operate the switches listed in the screen and confirm the result.

- 3** To return to the I/O Test screen, hold the Select switch in the raised position and press the Enter button.

## (2) OUTPUT TEST

This screen is used to test the illuminated switches.

- 1** Select "OUTPUT TEST" in the "I/O TEST" screen and press the Enter button. (See P. 25 "7-4-4 Switch/sensor test (I/O TEST).")  
The Output Test screen appears on the monitor.



Output Test screen

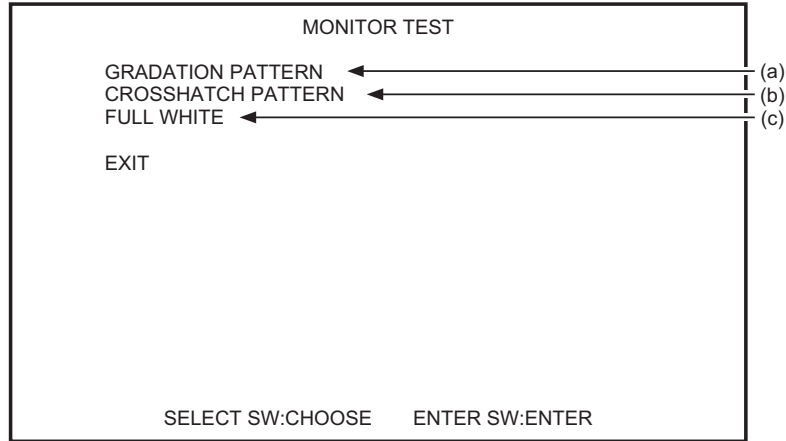
Item	Description
(a) LAMP1	When this item is set to "ON," the 1P Start button lights.
(b) LAMP2	When this item is set to "ON," the 2P Start button lights.
(c) LAMP3	When this item is set to "ON," the 3P Start button lights.
(d) LAMP4	When this item is set to "ON," the 4P Start button lights.

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection.
- 4** Flip the Select switch to turn on the illuminated switch corresponding to the selected item.
- 5** Before selecting the next item, press the Enter button. Repeat steps 2 thru 5 until all the switches have been checked.
- 6** To return to the I/O Test screen, select "EXIT" and press the Enter button.

### 7-4-5 Monitor condition test (MONITOR TEST)

This screen is used to check the monitor.

- 1** Select "MONITOR TEST" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")  
The Monitor Test screen appears on the monitor.



Monitor Test screen

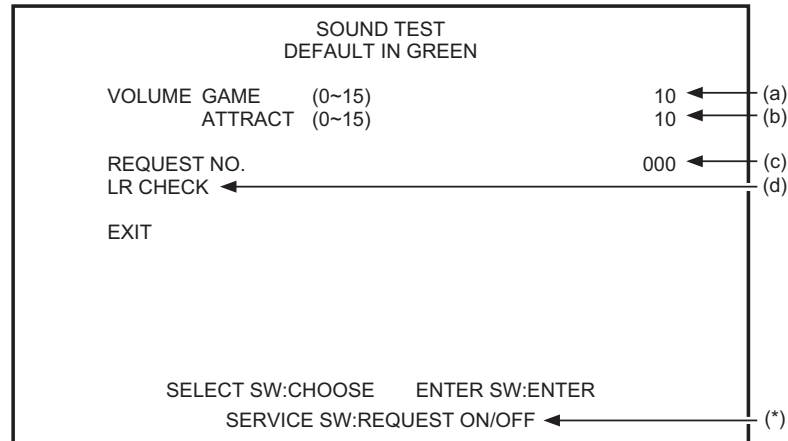
Item	Description
(a) GRADATION PATTERN	Displays a 16-step gradation pattern.
(b) CROSSHATCH PATTERN	Displays a crosshatch pattern.
(c) FULL WHITE	Displays an all-white screen.

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to go to the screen under the selection.
- 4** Press the Enter button again to return to the Monitor Test screen.
- 5** To return to the Menu screen, select "EXIT" and press the Enter button.

### 7-4-6 Sound adjustment (SOUND TEST)

This screen is used to adjust the sound volume, L/R channel balance, and other items.

- 1** Select "SOUND TEST" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")  
The Sound Test screen appears on the monitor.



Sound Test screen

Item	Description	Factory settings
(a) VOLUME GAME	Sets the sound volume in Game mode. 0 (no sound) to 15 (max.)	10
(b) VOLUME ATTRACT	Sets the sound volume in Attract mode. 0 (no sound) to 15 (max.)	10
(c) REQUEST NO.	Sets the sound type for the service button 000 (no sound) to 095	000
(d) LR CHECK	Checks the loudspeakers The check tone is heard from the loudspeakers in the following order; LEFT speaker (1P and 2P side), RIGHT speaker (3P and 4P side), LEFT + RIGHT (both) speakers.	

\* The sound set in the REQUEST NO. option is heard when the service button is pressed.

Press the service button while the VOLUME ATTRACT option is selected to check the volume set in the VOLUME ATTRACT option.

Press the service button while an option other than the VOLUME ATTRACT is selected to check the volume set in the VOLUME GAME option.

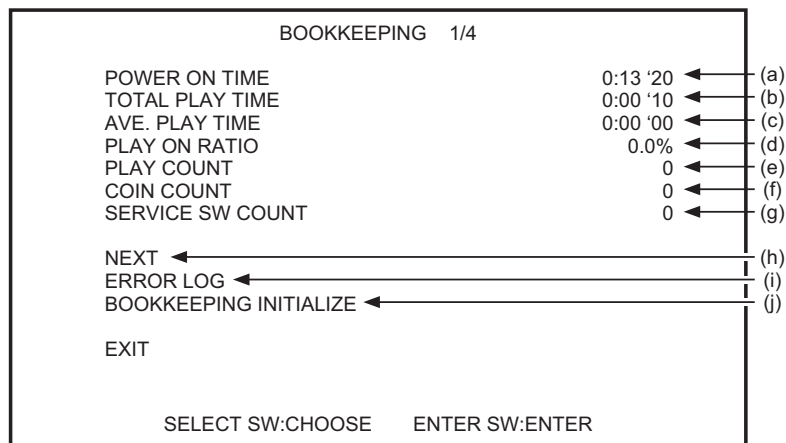
- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection.
- 4** Flip the Select switch up or down to change the setting, and then press the Enter button to enter the change. The display returns to the previous selection screen.
- 5** To return to the Menu screen, select "EXIT" and press the Enter button.

### 7-4-7 Game data display/initialization (BOOKKEEPING)

This screen is used to display various game data.

- 1** Select "BOOK KEEPING" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")

The Bookkeeping screen appears on the monitor.



Bookkeeping screen

Item	Description
(a) POWER ON TIME	Shows the time when the machine is turned on
(b) TOTAL PLAY TIME	Shows the total playing time
(c) AVE. PLAY TIME	Shows the average playing time per play
(d) PLAY ON RATIO	Shows the game-playing ratio (POWER ON TIME divided by TOTAL PLAY TIME)
(e) PLAY COUNT	Shows the total number of plays
(f) COIN COUNT	Shows the total number of coins
(g) SERVICE SW COUNT	Shows the total number of time the service button is pressed
(h) NEXT	Goes to the next screen
(i) ERROR LOG	Shows the error log (See P. 31 "7-4-7 (1) ERROR LOG.")
(j) BOOKKEEPING INITIALIZE	Initializes bookkeeping YES: Start initialization/NO: Stop initialization Note that the BACK UP MEMORY INITIALIZE option (See P. 32 "7-4-8 (2) Initialization and other settings (OTHERS).") can also initialize bookkeeping.

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** To return to the Menu screen, select "EXIT" and press the Enter button.



---

## (1) ERROR LOG

This screen is used to check error logs.

- 1** Select "ERROR LOG" in the Bookkeeping screen and press the Enter button. (See P. 30 "7-4-7 Game data display/initialization (BOOKKEEPING).")  
The Error Log screen appears on the monitor.

ERROR LOG 1/2	
01 COIN ERROR1	JAN/01/2010 FRI 10:09
02 COIN ERROR1	JAN/01/2010 FRI 10:08
03 COIN ERROR1	JAN/01/2010 FRI 10:07
04 COIN ERROR1	JAN/01/2010 FRI 10:06
05 COIN ERROR1	JAN/01/2010 FRI 10:05
06 COIN ERROR1	JAN/01/2010 FRI 10:04
07 COIN ERROR1	JAN/01/2010 FRI 10:03
08 COIN ERROR1	JAN/01/2010 FRI 10:02
09 COIN ERROR1	JAN/01/2010 FRI 10:01
10 COIN ERROR1	JAN/01/2010 FRI 10:00
NEXT	
EXIT	
SELECT SW:CHOOSE    ENTER SW:ENTER	

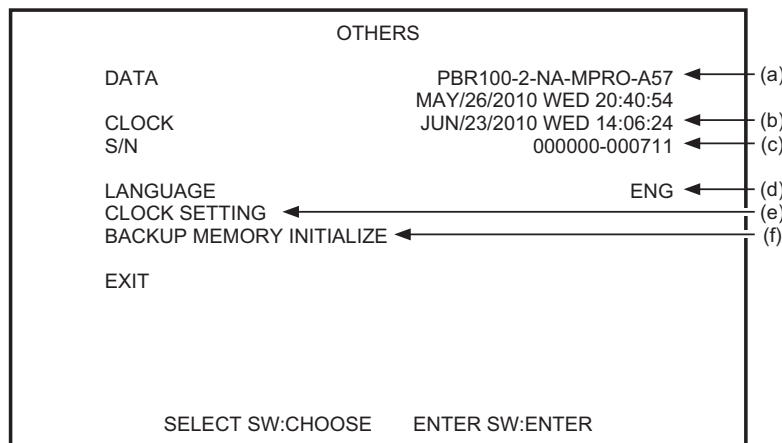
Error Log screen

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** To proceed to the next page, select "NEXT" and press the Enter button (available only when two or more pages exist).
- 4** To return to the Bookkeeping screen, select "EXIT" and press the Enter button.

## 7-4-8 Initialization and other settings (OTHERS)

This screen is used to initialize bookkeeping data (BOOKKEEPING) and other items.

- 1** Select "OTHERS" in the Menu screen and press the Enter button. (See P. 21 "7-4-1 Description of the menu screen (MENU).")  
The Others screen appears on the monitor.



Others screen

Item	Description
(a) DATA	Shows the version information.
(b) CLOCK	Shows the date and time.
(c) S/N	Shows the serial number.
(d) LANGUAGE	Shows the display language. ENG: English
(e) CLOCK SETTING	Sets the built-in clock. (See P. 33 "7-4-8 (1) CLOCK SETTING.")
(f) BACKUP MEMORY INITIALIZE	Initializes the respective backup memory. (YES: Starts initialization/NO: Stops initialization) (See P. 34 "7-4-8 (2) BACKUP MEMORY INITIALIZE.")

- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection.
- 4** Flip the Select switch up or down to change the setting, and then press the Enter button to enter the change. The display returns to the previous selection screen.
- 5** To return to the Bookkeeping screen, select "EXIT" and press the Enter button.

## (1) CLOCK SETTING

This screen is used to adjust the internal clock.

- 1** Select "CLOCK SETTING" in the Others screen and press the Enter button. (See P. 32 "7-4-8 Initialization and other settings (OTHERS).")  
The Clock Setting screen appears on the monitor.

CLOCK SETTING

RECENTRY TIME: ←
JAN/01/2010 FRI 10:00:00
(a)

CHANGE TO: ←
JAN/01/2010 FRI 10:00
(b)

SET ←
(c)

EXIT

SELECT SW:CHOOSE
ENTER SW:ENTER

Clock Setting screen

Item	Description
(a) RECENTRY TIME	Shows the current time.
(b) CHANGE TO:	Sets the time.
(c) SET	Enters the change.

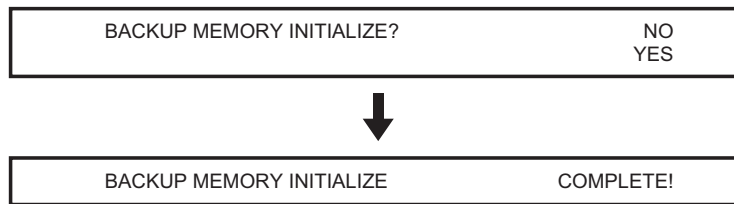
- 2** Flip the Select switch up or down to select an item. The selected item will blink.
- 3** Press the Enter button to enter the selection.
- 4** Flip the Select switch up or down to change the setting, and then press the Enter button to enter the change. The display returns to the previous selection screen.
- 5** Flip the Select switch to select "SET" and press the ENTER button. The internal clock starts working.
- 6** To return to the Others screen, select "EXIT" and press the Enter button.

---

## (2) BACKUP MEMORY INITIALIZE

This screen is used to initialize the backup memory.

- 1** Select "BACKUP MEMORY INITIALIZE" in the Others screen and press the Enter button. (See P. 32 "7-4-8 Initialization and other settings (OTHERS).")  
The YES/NO option appears next to the selection.
- 2** Select the YES option to initialize the backup memory.  
When initialization is complete, "COMPLETE!" appears on the screen.



- 3** To return to the Others screen, select "EXIT" and press the Enter button.

## 7-5 Error display (for the arcade operator)



- The following shows items to be checked by the arcade operator. If an error other than the following is encountered, request a technician for service. (Technicians, see P. 48 “8B-3 Error display (for the technician).”)

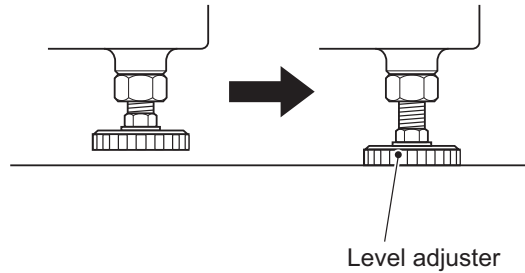
Error code	Error indication	Cause	Remedy
2-3	BACKUP MEMORY ERROR 1	Backup memory damage	Initialize the backup memory. (See P. 34 “7-4-8 (2) BACKUP MEMORY INITIALIZE.”)
		MAIN PCB failure	Request a technician for service. (See P. 48 “8B-3 Error display (for the technician).”)
2-4	BACKUP MEMORY ERROR 2	Backup memory damage	Initialize the backup memory.(See P. 34 “7-4-8 (2) BACKUP MEMORY INITIALIZE.”)
		MAIN PCB failure	Request a technician for service. (See P. 48 “8B-3 Error display (for the technician).”)

## 8A. ASSEMBLY AND SETUP – To be conducted by a technician only –

### 8A-1 Assembly

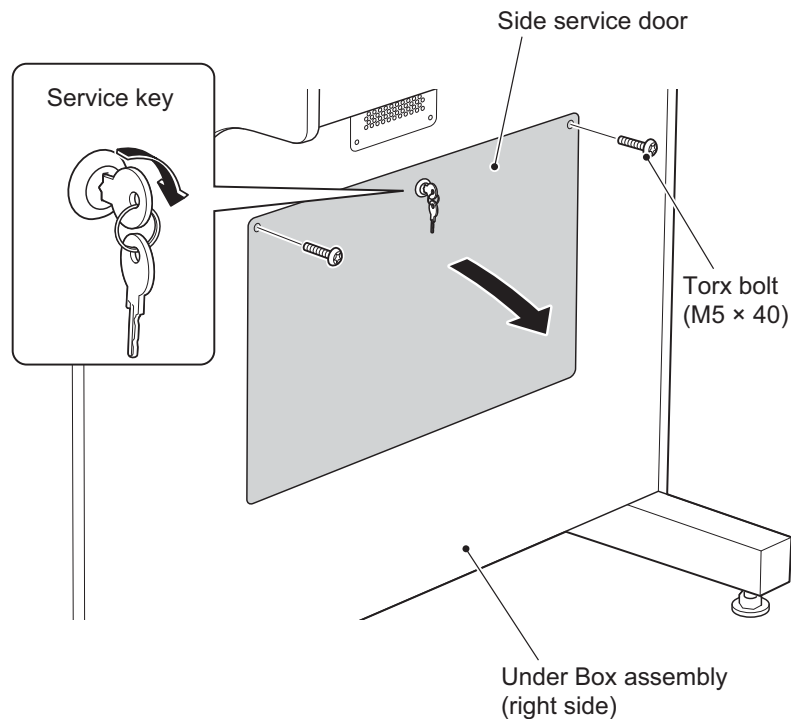
#### 8A-1-1 Securing the machine using level adjusters

After installing the machine in a location as described in “5-1 Installation conditions” on page 10, be sure to make the machine level and stable using the four level adjusters.



#### 8A-1-2 Removing and attaching the side service door

- 1** Remove the two Torx bolts (M5 x 40), unlock the door using the provided service key, and remove the door.
- 2** Attach the door following the above steps in reverse.



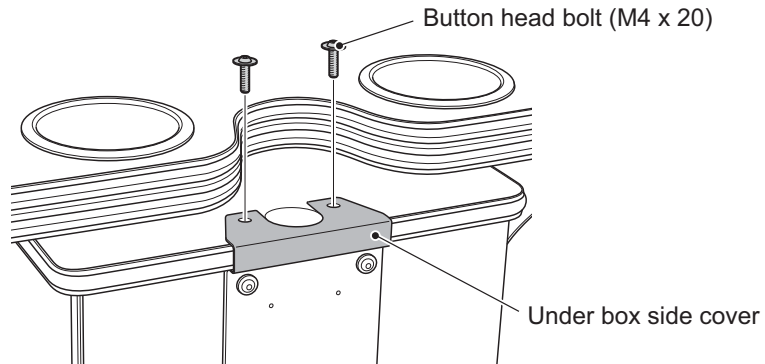
### 8A-1-3 Attaching the Signboard assembly

## WARNING

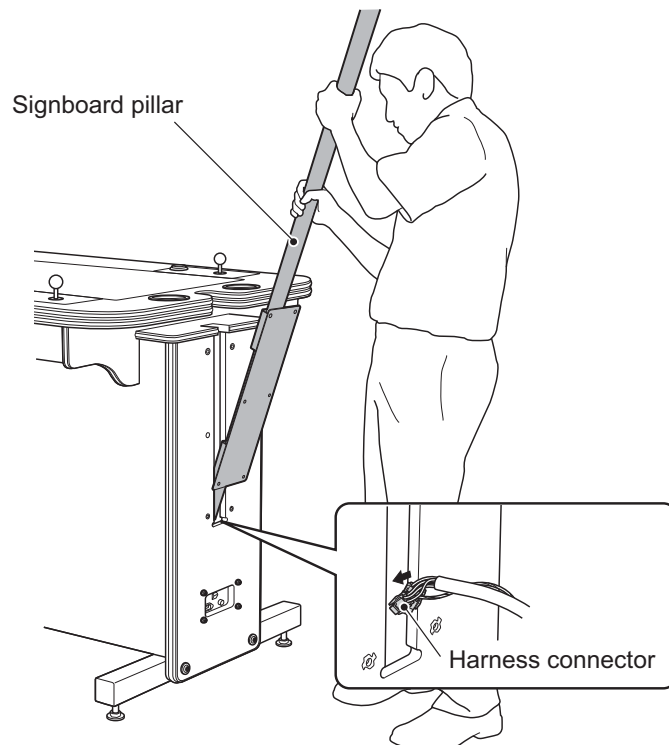
- The Signboard assembly weighs approximately 286.6 lb. (16 kg). It should be attached by two or more people in a large work area to prevent accidents.
- Since attachment of the Signboard assembly is performed above waist level, prepare a step ladder or platform to stand on. Performing the task in an awkward position can result in injury or machine damage.

#### (1) Attaching the signboard pillar

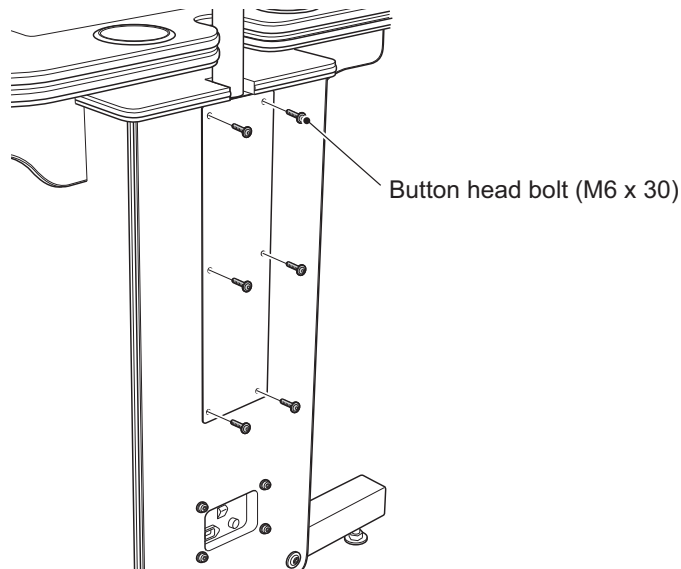
- 1** Remove the two button head bolts (M4 x 20), and then remove the under box side cover.



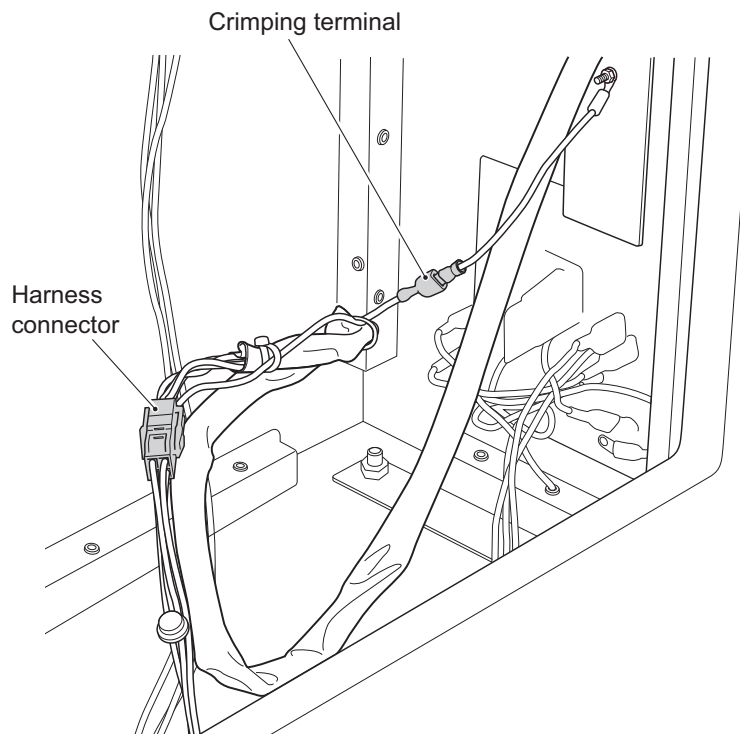
- 2** Insert the signboard pillar into the opening on the Under Box assembly.



- 3** Secure the signboard pillar using the six button head bolts (M6 x 30).



- 4** Remove the side service door (See P. 36 “8A-1-2 Removing and attaching the side service door.”), and then connect the harness connector and crimping terminal from the pillar.



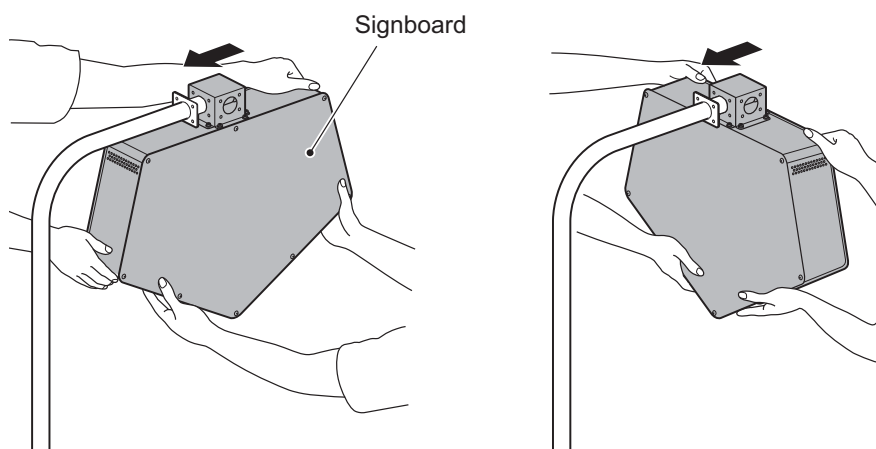
- 5** Place the under box side cover on the Under Box assembly, and then secure it using the two button head bolts (M4 x 20) (see **1**).



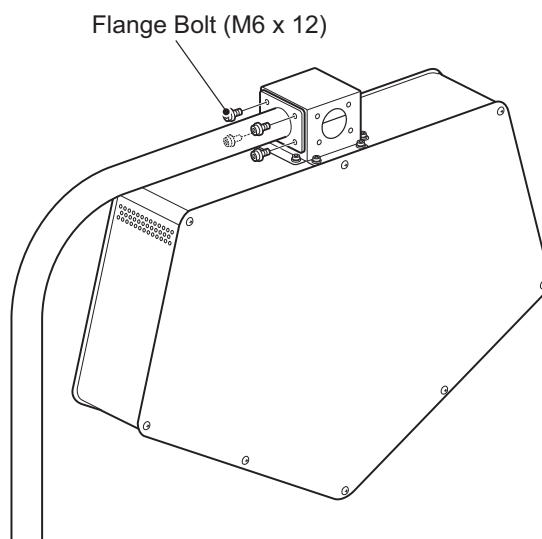
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(2) Attaching the signboard

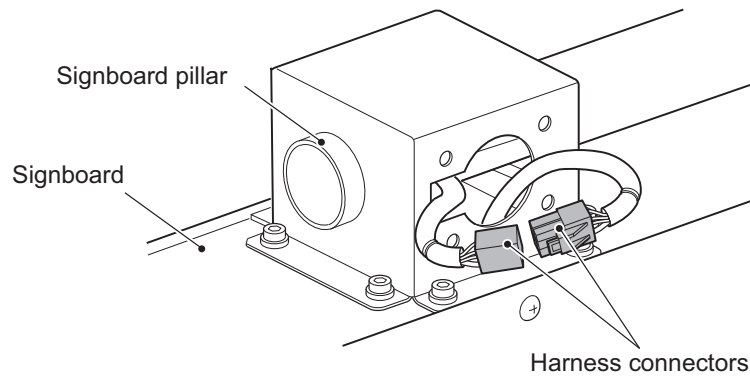
- 1** Hang the notched signboard bracket hole on the pillar. Two installation orientations are available for the signboard.



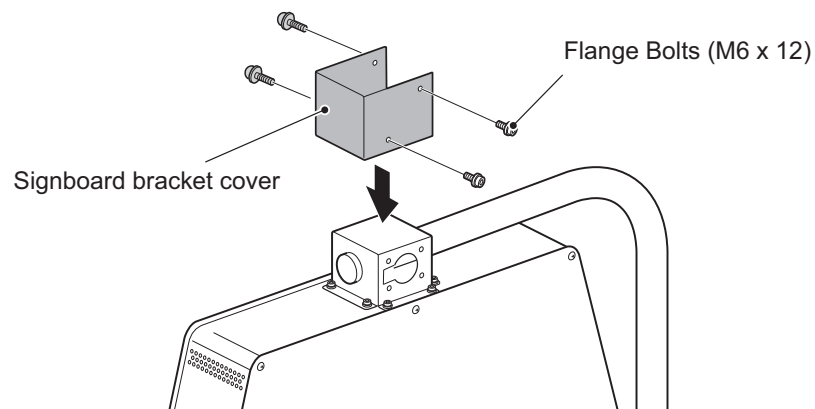
- 2** Secure the signboard bracket using the four flange bolts (M6 x 12).



- 3** Connect the wiring harness connector that is pulled out from the signboard into the connector that is pulled out from the signboard pillar.



- 4** Cap the signboard bracket cover on the bracket, and then secure it using four flange bolts (M6 x 12).



## 8A-2 Disassembly for passing through a narrow corridor

### 8A-2-1 Removing the Middle Box assembly from the Under Box assembly

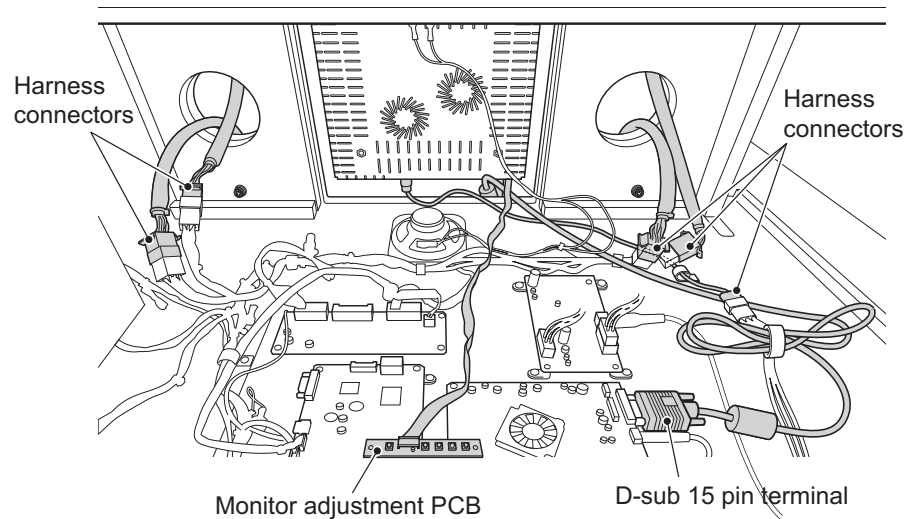
#### WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

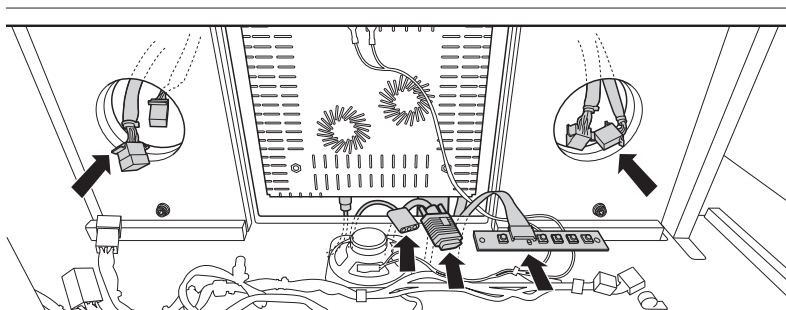
#### CAUTION

- The Middle Box assembly including the top board weighs approximately 110.2 lb. (50 kg). It should be removed by three or more people in a large work area to prevent accidents.

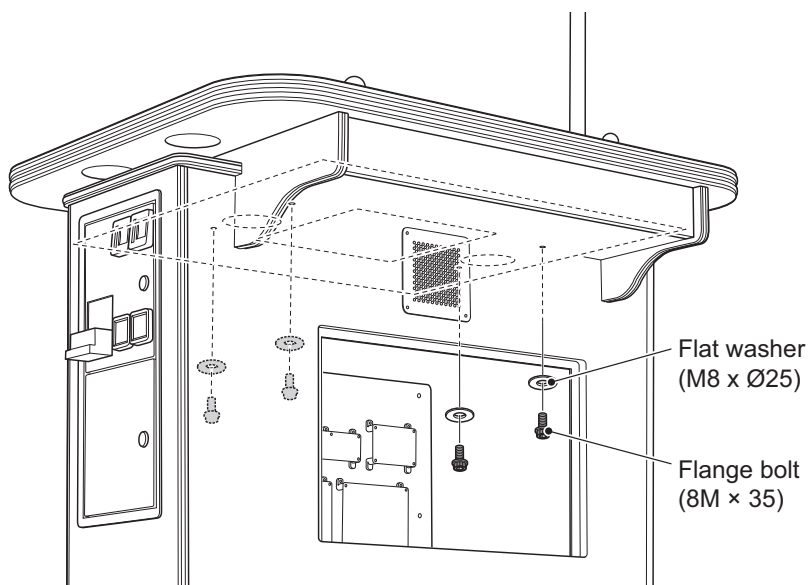
- 1** Turn the power switch off and unplug the power cable. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3** Disconnect the five harness connectors and the D-sub 15 pin terminal.



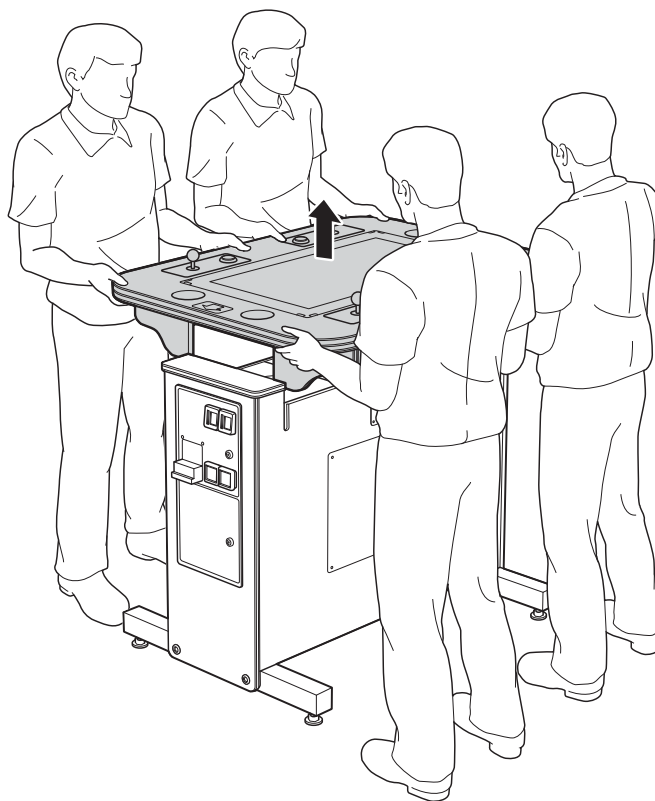
- 4** Push the disconnected harnesses and cords into the Middle Box assembly from the openings in the Middle Box assembly.



- 5** Remove the four flange bolts (M8 x 35) and four flat washers (M8 x Ø25).



- 6** Lift the Middle Box assembly to remove it from the Under Box assembly.



- 7** Attach the Middle Box assembly following the above steps in reverse.

## 8B. SERVICES – To be conducted by a technician only –



### WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before servicing the machine (including preventive measures against failure and repairs).

## 8B-1 Inspections and services



### WARNING

- The machine should be inspected and serviced on a regular basis. Failing to do so may result in accidents or damage to the machine.

### 8B-1-1 Inspection items

Check the following inspection items regularly.

- (1) Level adjuster
  - Make sure that the machine is stable on the floor. (See P. 36 “8A-1-1 Securing the machine using level adjusters.”)
- (2) Power cord plug
  - Make sure that the power cord is connected firmly to the cord box on the machine and the AC outlet.
  - Be sure to keep the cord box free of dust and dirt.
  - Check to see if there are any cracks in the power cord. If the power cord is abnormal in any way, replace it with a new one.
- (3) Bolts and nuts

Check to be sure that the bolts and nuts used for the following parts are not loose. If any of them are loose, tighten them firmly.

  - For securing the signboard pillar, signboard, and under box side cover (See P. 37 “8A-1-3 Attaching the Signboard assembly”)
  - For other assemblies and parts

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## 8B-2 Troubleshooting

### WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before conducting the tasks described below.
- If the problems encountered are not found in 8B-2-1 thru 8B-2-5 or if the problem persists, immediately turn the power switch off to stop the operation of the machine, and contact your distributor. Operating the machine without fixing a problem can result in an accident.

### NOTICE

- In the event a machine malfunctions, check to make sure that all connections are secure.
- If there is a problem in the MAIN, I/O, A.I., or AMP PCB, the faulty parts must be repaired by our company. Never use a tester to conduct a continuity test. The internal voltage of a tester can damage ICs.
- When sending parts for repair, pack them carefully. When sending the MAIN, I/O, A.I., or AMP PCB, wrap it completely in foam or bubble wrap and place it in a corrugated cardboard box to protect it from external impact.

### 8B-2-1 General

Problem	Main cause	Remedy	Page
The machine will not turn on.	The power cord is disconnected.	Connect the cord securely to the AC outlet.	_____
	The fuse is blown.	Replace the fuse.	_____
The game will not start. (The attraction is not displayed.)	The connectors on the MAIN PCB are disconnected.	Connect them securely.	Page 55
	MAIN PCB failure	Replace the PCB.	Page 55
The machine malfunctions or operation is unstable.	The power supply voltage is outside the range of 104 to 127 V AC	Disconnect large power consuming equipment (air conditioners, large rides, etc.) from the same power line, and ensure that the game machine receives the specified power supply voltage.	_____

### 8B-2-2 Middle Box assembly

Problem	Main cause	Remedy	Page
No images on the LCD monitor	The connectors to the LCD monitor are disconnected.	Connect them securely.	Page 54
	LCD monitor failure	Replace the LCD monitor.	Page 52
	MAIN PCB failure	Replace the PCB.	Page 55

### 8B-2-3 Under Box assembly

Problem	Main cause	Remedy	Page
No sound from the loudspeakers	The sound volume is set to the minimum.	Turn the volume up.	Page 29
	The connectors to the loudspeakers are disconnected.	Connect them securely.	_____
	AMP PCB failure	Replace the PCB.	Page 59
	MAIN PCB failure	Replace the PCB.	Page 55



**8B-2-4 Control Panel assembly**

Problem	Main cause	Remedy	Page
One of the joysticks does not operate properly.	The connector on the joystick is disconnected.	Connect it securely.	Page 62
	Joystick failure	Replace the joystick.	Page 62
	A.I. PCB failure	Replace the PCB.	Page 58
There is no response from one of the illuminated switches.	The connector on the illuminated switch is disconnected.	Connect it securely.	Page 63
	Illuminated switch failure	Replace the switch.	Page 63
	I/O PCB failure	Replace the PCB.	Page 57
One of the illuminated switches does not light up.	The connector on the illuminated switch is disconnected.	Connect it securely.	Page 63
	The LED lamp is burnt out.	Replace the lamp.	Page 63
	I/O PCB failure	Replace the PCB.	Page 57

**8B-2-5 Signboard assembly**

Problem	Main cause	Remedy	Page
The fluorescent bulb does not light up.	The power cord connector for the Signboard assembly is disconnected.	Connect it securely.	Page 38 and 40
	The fluorescent bulb is burned out.	Replace the bulb.	Page 64
	Loose fluorescent bulb	Screw the bulb in securely.	Page 64

## 8B-3 Error display (for the technician)



- If the error indication remains after the appropriate countermeasures have been taken, set the Test switch to ON and then to OFF to cancel the error indication.

Error code	Error indication	Cause	Remedy	Page
1-2	COIN ERROR 2	Service button failure or some other problem near the button	Contact your distributor.	_____
1-11	COIN ERROR 1 (COIN UNIT 1)	COIN UNIT 1 failure	Replace the coin selector or bill acceptor connected to COIN UNIT 1.	_____
		COIN UNIT 1 wiring harness failure	Contact your distributor.	_____
1-21	COIN ERROR 1 (COIN UNIT 2)	COIN UNIT 2 failure	Replace the coin selector or bill acceptor connected to COIN UNIT 2.	_____
		COIN UNIT 2 wiring harness failure	Contact your distributor.	_____
1-31	COIN ERROR 1 (COIN UNIT 3)	COIN UNIT 3 failure	Replace the coin selector or bill acceptor connected to COIN UNIT 3.	_____
		COIN UNIT 3 wiring harness failure	Contact your distributor.	_____
2-3	BACKUP MEMORY ERROR 1	Backup memory damage	Initialize the backup memory.	Page 34
		MAIN PCB failure	Replace the MAIN PCB.	Page 55
2-4	BACKUP MEMORY ERROR 2	Backup memory damage	Initialize the backup memory.	Page 34
		MAIN PCB failure	Replace the MAIN PCB.	Page 55
2-5	BATTERY ERROR	The MAIN PCB backup battery is dead.	Replace the battery.	Page 56
3-1	I/O ERROR 1	The connectors on the I/O PCB are disconnected.	Connect them securely.	Page 57
		I/O PCB failure	Replace the I/O PCB.	Page 57
3-3	I/O ERROR 2	The connectors on the I/O PCB are disconnected.	Connect them securely.	Page 57
		I/O PCB wiring harness failure	Contact your distributor.	_____
3-11	I/O ERROR 3	The connectors on the A.I. PCB are disconnected.	Connect them securely.	Page 58
		A.I. PCB failure	Replace the A.I. PCB.	Page 58
3-13	I/O ERROR 4	The connectors on the A.I. PCB are disconnected.	Connect them securely.	Page 58
		A.I. PCB wiring harness failure	Contact your distributor.	_____

## 8B-4 Assembly and disassembly of the machine

### 8B-4-1 Top Board assembly

#### (1) Removing and attaching the Top Board assembly

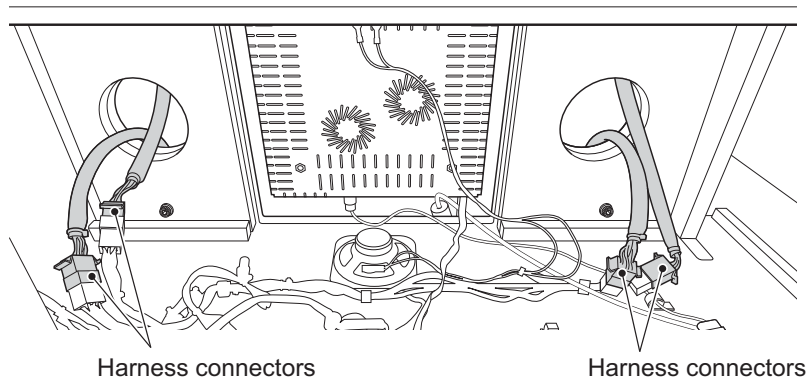
### WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

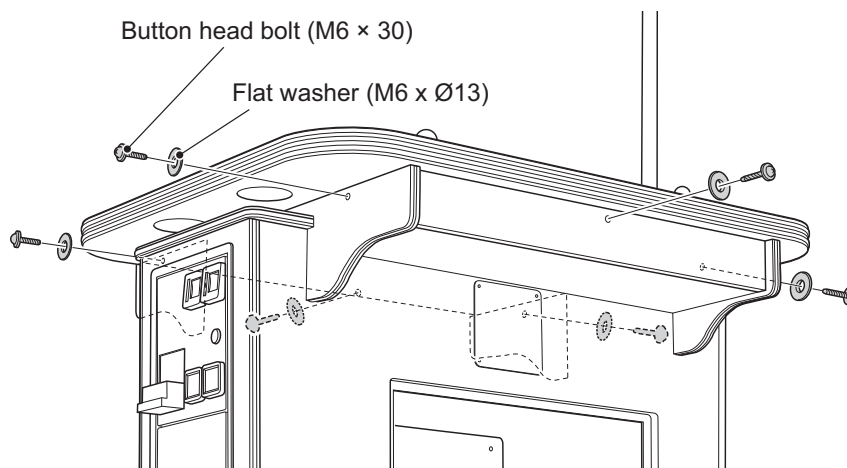
### CAUTION

- The Top Board assembly weighs approximately 44.1 lb. (20 kg). It should be removed by three or more people in a large work area to prevent accidents.

- 1** Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3** Disconnect the four harness connectors.



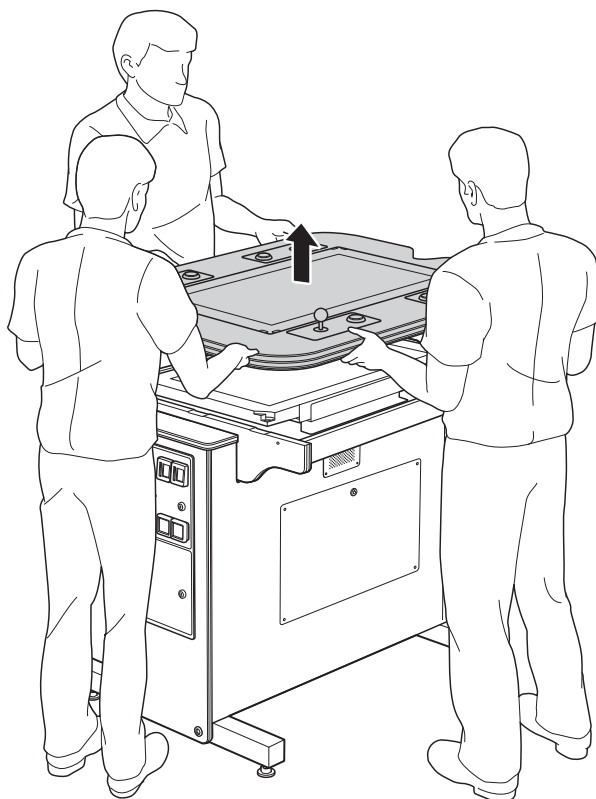
- 4** Remove the six button head bolts (M6 x 30) and their flat washers (M6 x Ø13).



- 5** Lift the Top Board assembly to remove it from the Middle Box assembly.



- Care must be taken so that the harness connectors are not caught in the Middle Box assembly holes when lifting the Top Board assembly.



- 6** Attach the Top Board assembly following the above steps in reverse.

(2) Replacing the monitor glass

**! WARNING**

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

**! CAUTION**

- The monitor glass should be removed by two or more people in a large work area to prevent accidents.



**NOTICE**

- The monitor glass is glued into the Top Board assembly. Be sure to have a replacement Top Board on hand before attempting this procedure.

**1**

Remove the Top Board assembly. (See P. 49 “8B-4-1 (1) Removing and attaching the Top Board assembly.”)

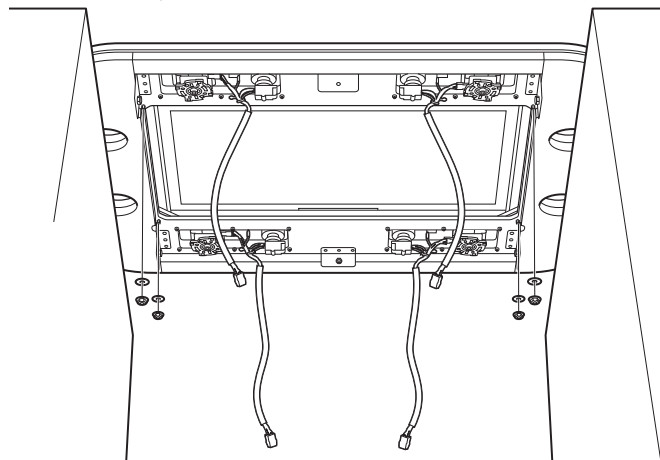


**NOTICE**

- The following disassembly work requires sufficient space below the Top Board assembly. Before starting work, lay the Top Board assembly on two stable and solid boxes, etc., as illustrated below, and make sure that the Top Board assembly is level and stable.

**2**

Remove all components from the Top Board assembly and replace onto new assembly.



## 8B-4-2 Middle Box assembly

### (1) Replacing the LCD monitor

#### **WARNING**

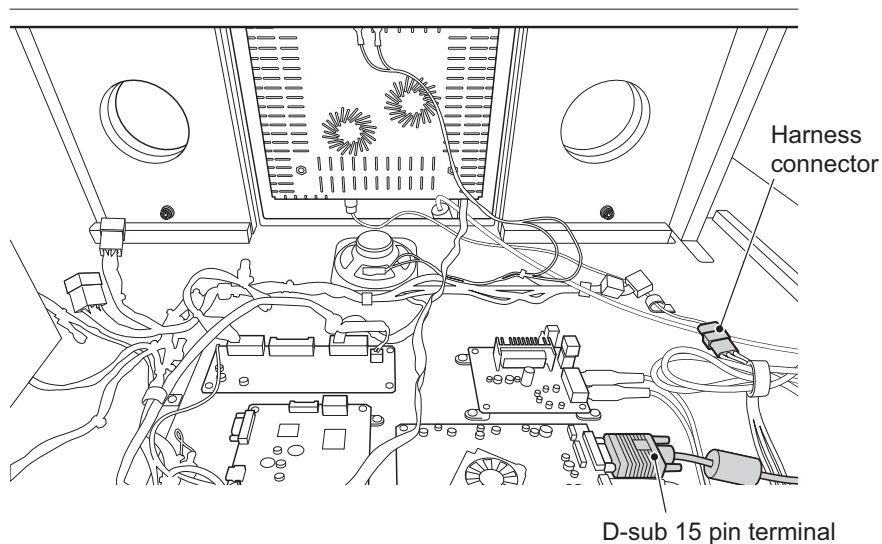
- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.
- The LCD monitor may remain hot after turning the power switch off. Be sure to allow the LCD monitor to cool down before starting the replacement procedure.

#### **CAUTION**

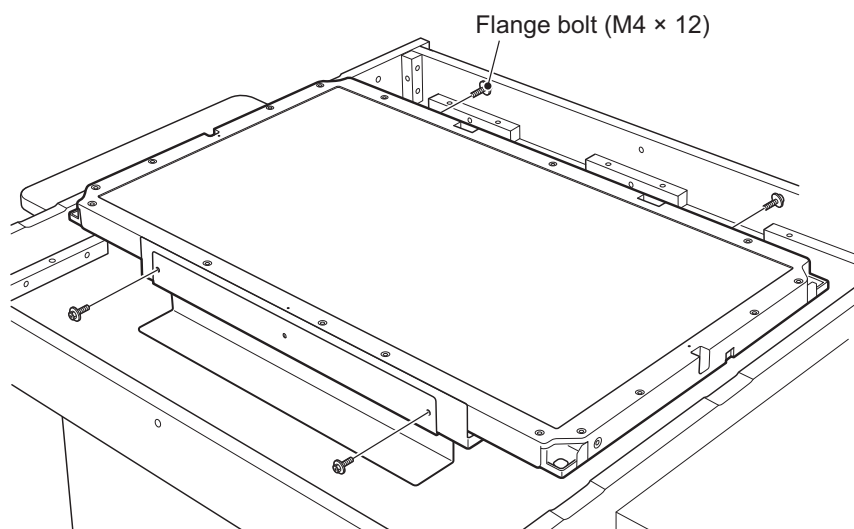
- The LCD monitor weighs approximately 26.5 lb. (12 kg). It should be removed by two or more people in a large work area to prevent accidents.

- 1** Remove the Top Board assembly. (See P. 49 “8B-4-1 (1) Removing and attaching the Top Board assembly.”)

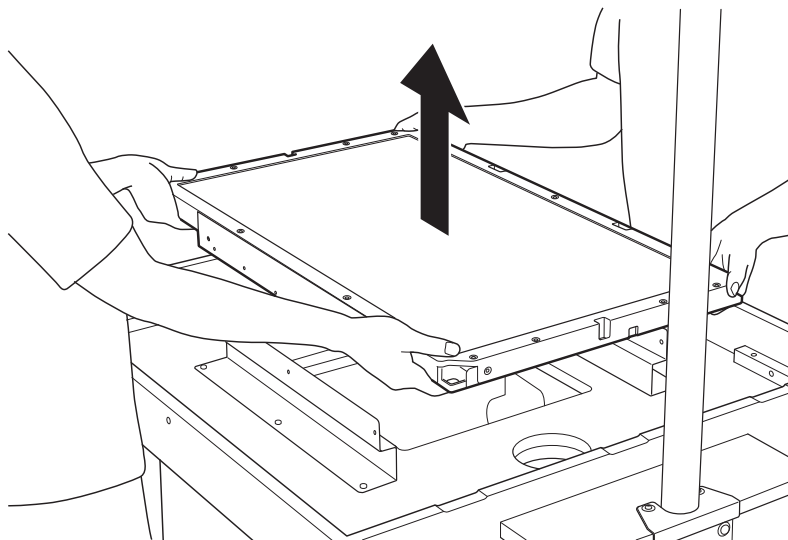
- 2** Disconnect the harness connector and D-sub 15 pin terminal.



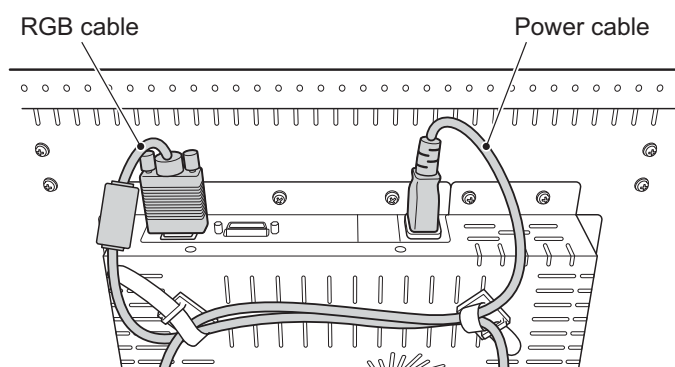
- 3** Remove the four flange bolts (M4 x 12).



- 4** Lift the LCD monitor to remove it from the Middle Box assembly.



- 5** Remove the RGB and power cables from the LCD monitor.



- 6** Attach the LCD monitor following the above steps in reverse.



## 8B-4-3 Under Box assembly

### (1) Replacing the MAIN PCB

# WARNING

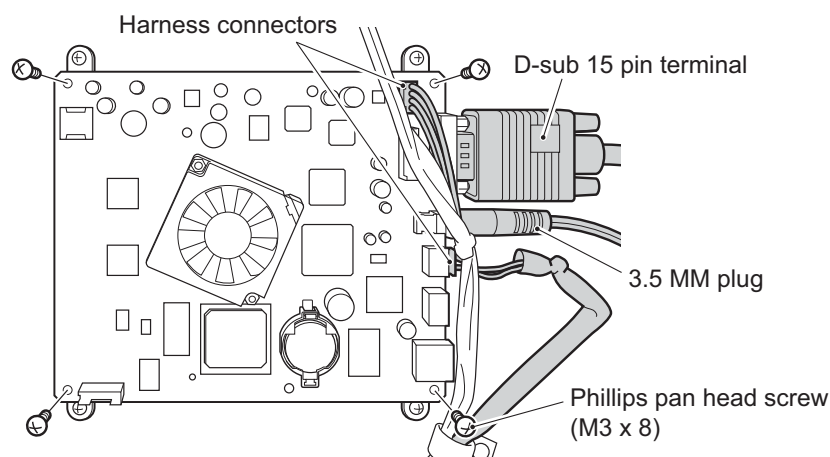
- To prevent electric shock, accident and injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.



#### NOTICE

- The PCB can be easily damaged by static electricity . If the PCB is handled by a person charged with static electricity , parts mounted on the PCB can be damaged. Before touching the PCB, be sure to remove static electricity from your body by touching a grounded metal object.

- 1 Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2 Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3 Disconnect the two harness connectors, D-sub 15 pin terminal, and 3.5 MM plug.



- 4 Remove the four Phillips pan head screws (M3 x 8) with flat and spring washers to remove the MAIN PCB.
- 5 Attach the MAIN PCB following the above steps in reverse.

(2) Replacing the backup battery on the MAIN PCB

**! WARNING**

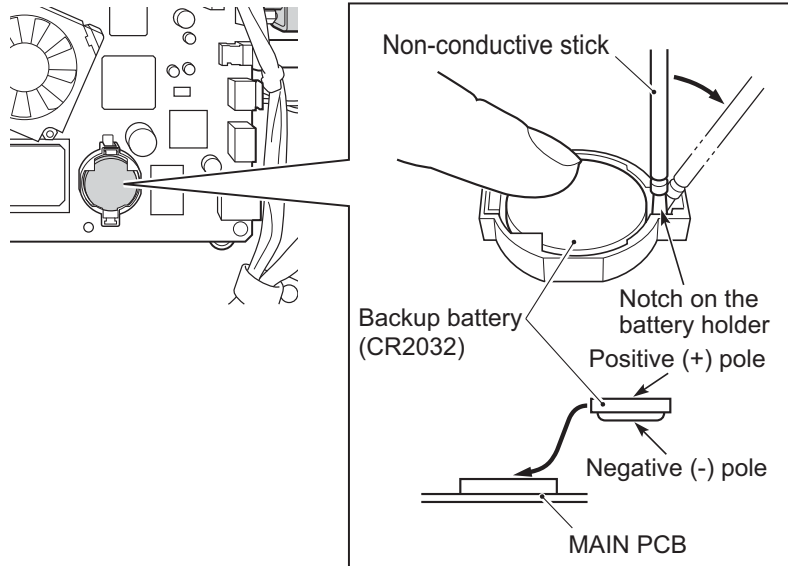
- To prevent electric shock, accident and injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

**NOTICE**

- The PCB can be easily damaged by static electricity . If the PCB is handled by a person charged with static electricity , parts mounted on the PCB can be damaged. Before touching the PCB, be sure to remove static electricity from your body by touching a grounded metal object.

- 1** Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the MAIN PCB. (See P. 55 “8B-4-3 (1) Replacing the MAIN PCB.”)
- 3** Place the MAIN PCB on a flat surface such as a desk.
- 4** While gently pressing on the battery with your finger, insert a non-conductive small stick into the notch on the battery holder, and then tilt the stick to remove the battery.

\* Use a CR2032 for the backup battery.



- 5** Attach the battery following the above steps in reverse.

### (3) Replacing the I/O PCB

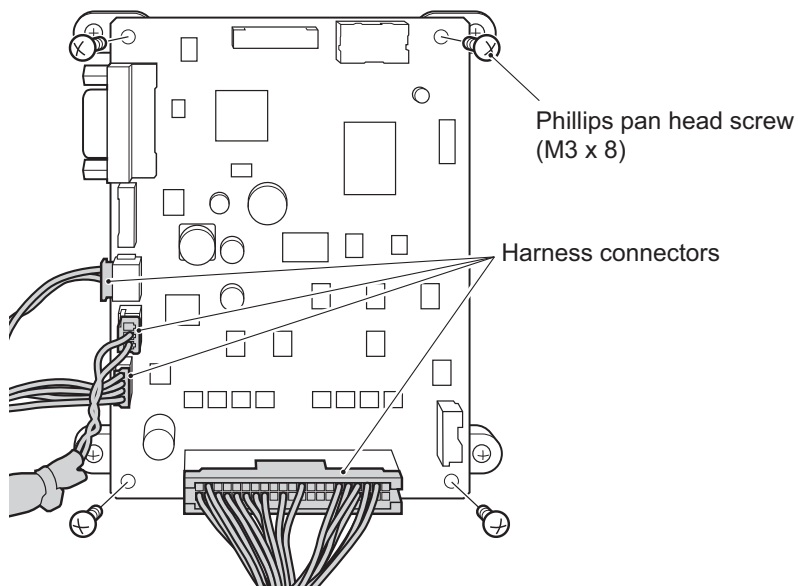
## WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.



- The PCB can be easily damaged by static electricity . If the PCB is handled by a person charged with static electricity , parts mounted on the PCB can be damaged. Before touching the PCB, be sure to remove static electricity from your body by touching a grounded metal object.

- 1** Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3** Disconnect the four harness connectors.



- 4** Remove the four Phillips pan head screws (M3 x 8) with flat and spring washers and remove the I/O PCB.
- 5** Attach the I/O PCB following the above steps in reverse.

(4) Replacing the A.I. PCB

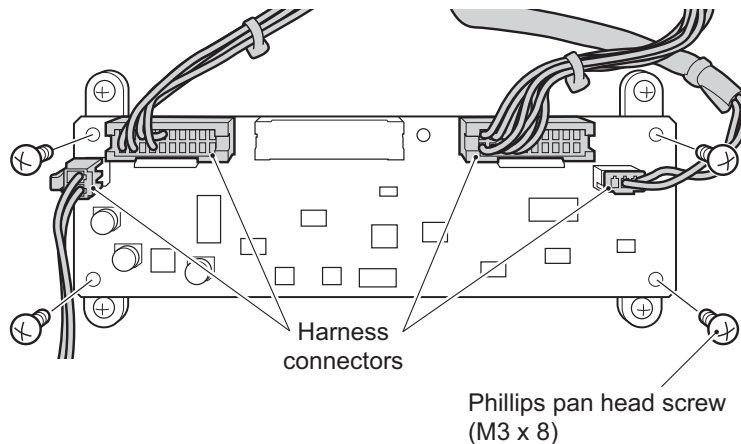
**! WARNING**

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

**NOTICE**

- The PCB can be easily damaged by static electricity . If the PCB is handled by a person charged with static electricity , parts mounted on the PCB can be damaged. Before touching the PCB, be sure to remove static electricity from your body by touching a grounded metal object.

- 1** Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3** Disconnect the four harness connectors.



- 4** Remove the four Phillips pan head screws (M3 x 8) with flat and spring washers and remove the A.I. PCB.
- 5** Attach the A.I. PCB following the above steps in reverse.

### (5) Replacing the AMP PCB

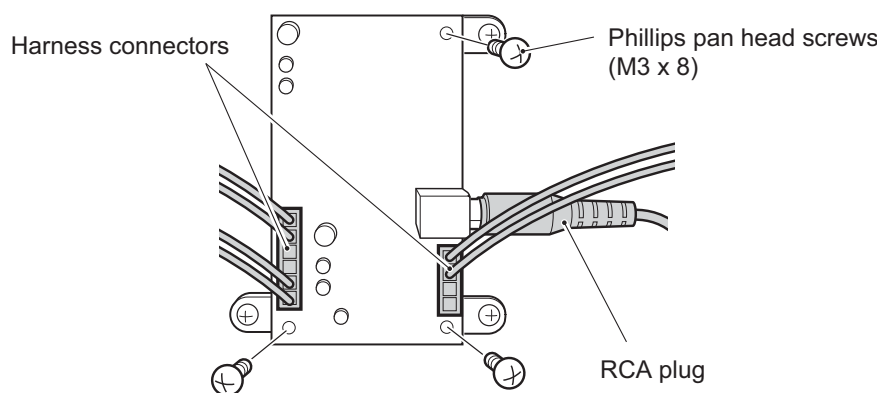
## WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.



- The PCB can be easily damaged by static electricity . If the PCB is handled by a person charged with static electricity , parts mounted on the PCB can be damaged. Before touching the PCB, be sure to remove static electricity from your body by touching a grounded metal object.

- 1** Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3** Disconnect the two harness connectors and RCA plug.



- 4** Remove the three Phillips pan head screw (M3 x 8) with flat and spring washers and remove the AMP PCB.
- 5** Attach the AMP PCB following the above steps in reverse.

(6) Replacing the power supply

## ⚠ WARNING

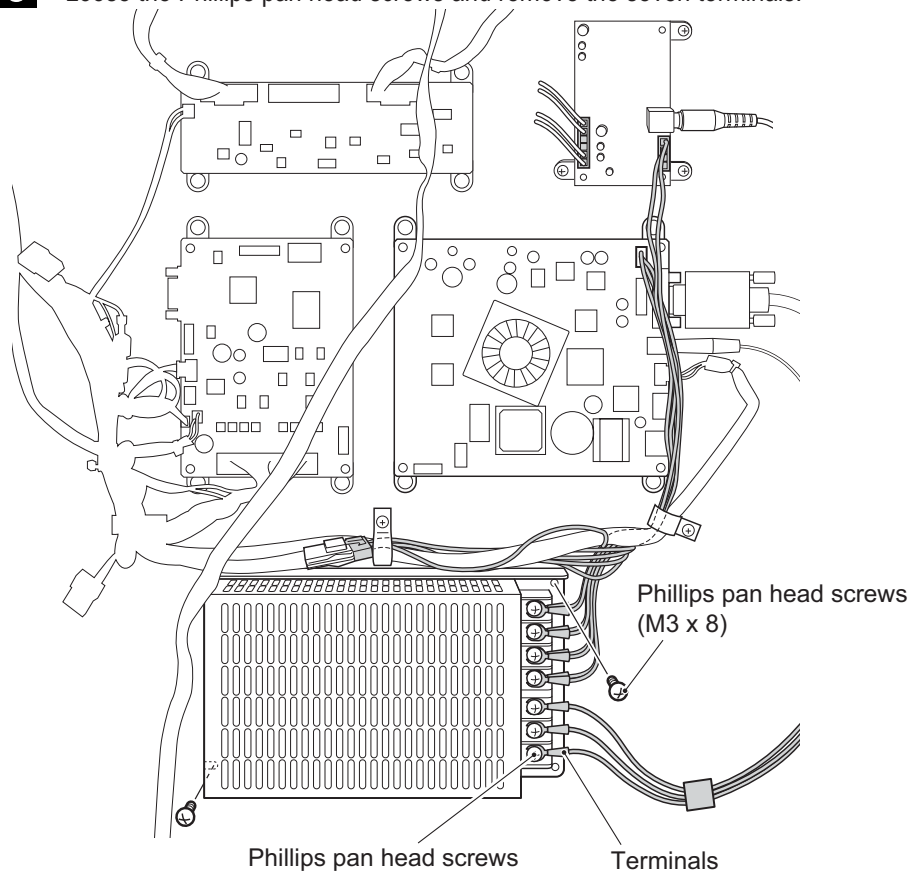
- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.



### NOTICE

- The PCB can be easily damaged by static electricity . If the PCB is handled by a person charged with static electricity , parts mounted on the PCB can be damaged. Before touching the PCB, be sure to remove static electricity from your body by touching a grounded metal object.

- 1** Turn the power switch off. (See P. 17 “7-2-1 Turning the power switch on.”)
- 2** Remove the side service door. (See P. 36 “8A-1-2 Removing and attaching the side service door.”)
- 3** Loosen the Phillips pan head screws and remove the seven terminals.



- 4** Remove the two Phillips pan head screws (M3 x 8) with flat and spring washers and remove the power supply.
- 5** Attach the power supply following the above steps in reverse.

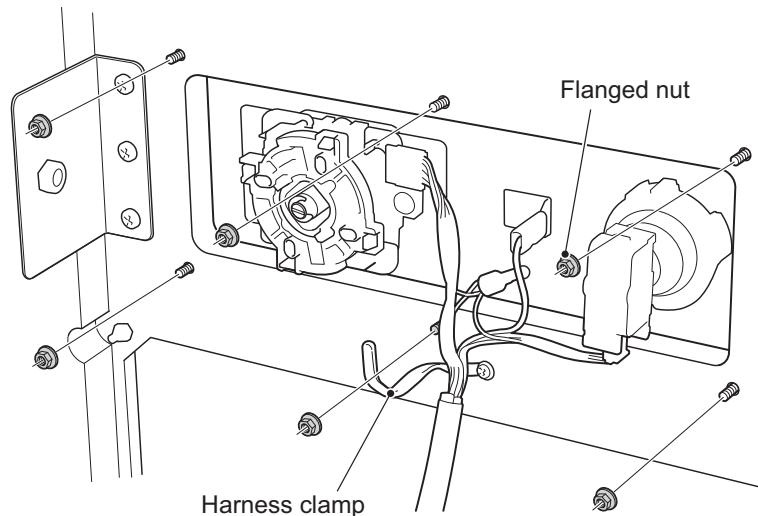
## 8B-4-4 Control Panel assembly

### (1) Removing and attaching the Control Panel assembly

#### WARNING

- To prevent electric shock, accident and injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

- 1** Remove the Top Board assembly. (See P. 19 “8B-4-1 (1) Removing and attaching the Top Board assembly.”)
- 2** Release the harness from the harness clamp on the back of the Top Board assembly.
- 3** Remove the six flanged nuts to remove the Control Panel assembly.



- 4** Attach the Control Panel assembly following the above steps in reverse.



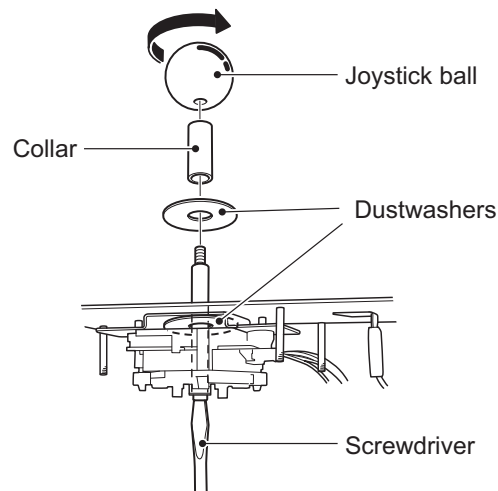
- The Control Panel assemblies are color-coded for each player number. (See P. 9 “4 OVERALL CONSTRUCTION (Names of Parts).”) Make sure that all the Control Panel assemblies are attached in the correct positions.

## (2) Replacing the joystick

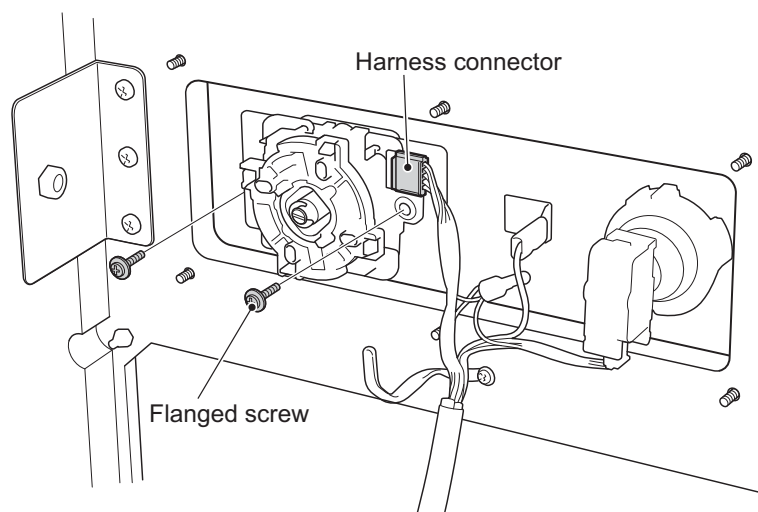
### WARNING

- To prevent electric shock, accident and injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

- 1** Remove the Top Board assembly. (See P. 49 “8B-4-1 (1) Removing and attaching the Top Board assembly.”)
- 2** While holding the thread on the bottom of the joystick shaft using a screwdriver, turn the joystick ball counterclockwise to remove the ball, collar, and upper Dustwasher.



- 3** Remove the two flanged screws and disconnect the harness connector to remove the joystick.



- 4** Attach the joystick following the above steps in reverse.

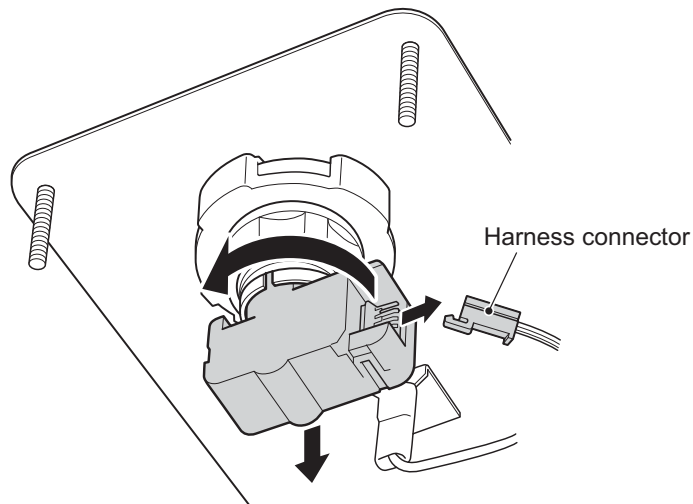


(3) Replacing the illuminated switch and its LED lamp

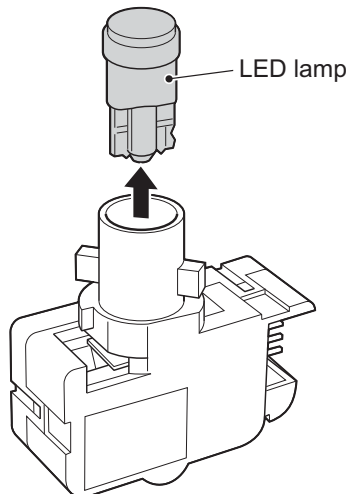
**! WARNING**

- To prevent electric shock, accident and injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.

- 1** Remove the Top Board assembly. (See P. 49 “8B-4-1 (1) Removing and attaching the Top Board assembly.”)
- 2** Remove the harness connector, and then turn the illuminated switch counterclockwise to remove it.



- 3** Pull out the LED lamp from the illuminated switch.



- 4** Replace the illuminated switch or LED lamp.
- 5** Attach the illuminated switch following the above steps in reverse, making sure that the connector orientation is correct.

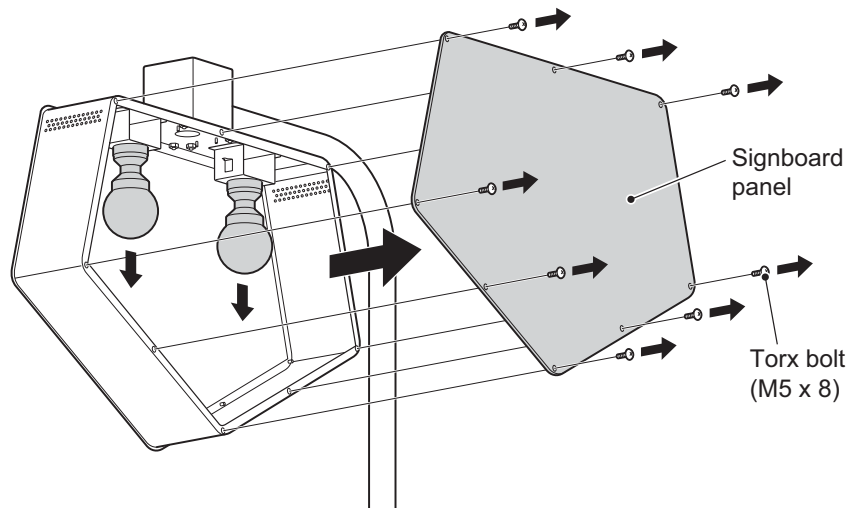
## 8B-4-5 Signboard assembly

### (1) Replacing the fluorescent lamp

## ! WARNING

- To prevent electric shock, accident or injury and to prevent damage to the electrical circuitry of the machine, be sure to turn the power switch off before performing the tasks described below.
- Since attachment of the Signboard assembly is performed above waist level, prepare a step ladder or platform to stand on. Performing the task in an awkward position can result in injury or machine damage.
- Be sure to replace with the proper fluorescent lamp. Don't install the other types of lamp.

- 1** Turn the power switch off. (See P. 17 "7-2-1 Turning the power switch on.")
- 2** Remove the eight Torx bolts (M5 x 8) and then the signboard panel.



- 3** Replace the fluorescent lamp.
- 4** Attach the signboard panel following the above steps in reverse.

## 9. DISPOSAL OF THE MACHINE

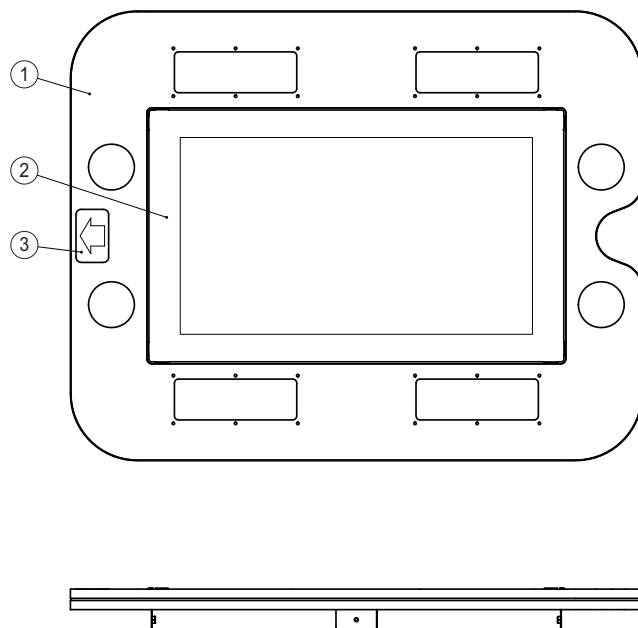
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### **WARNING**

- The machine must be collected, transported and discarded in accordance with applicable local laws and regulations.
- When entrusting a third party to collect, transport and discard the machine, be sure to select specialist companies.
- Dispose of used lithium batteries in accordance with local laws and regulations.
- Before disposing of lithium batteries, place pieces of electrical insulation tape over both the positive and negative electrodes. If the electrodes of the battery contact a metal object, a fire or explosion may result.

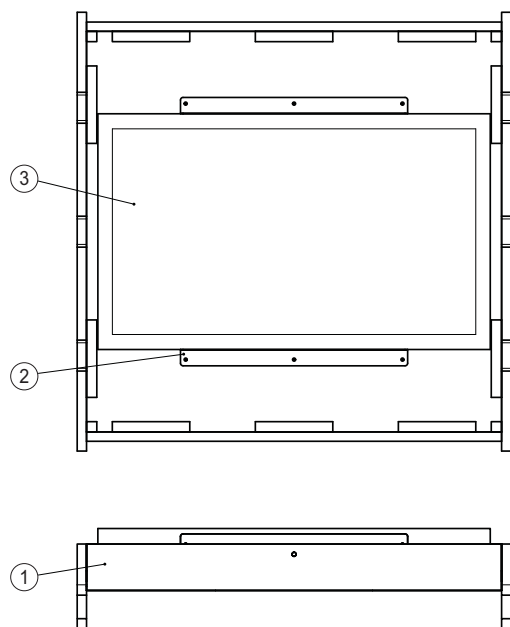
## 10. PARTS LISTS

### 10-1 Top Board assembly



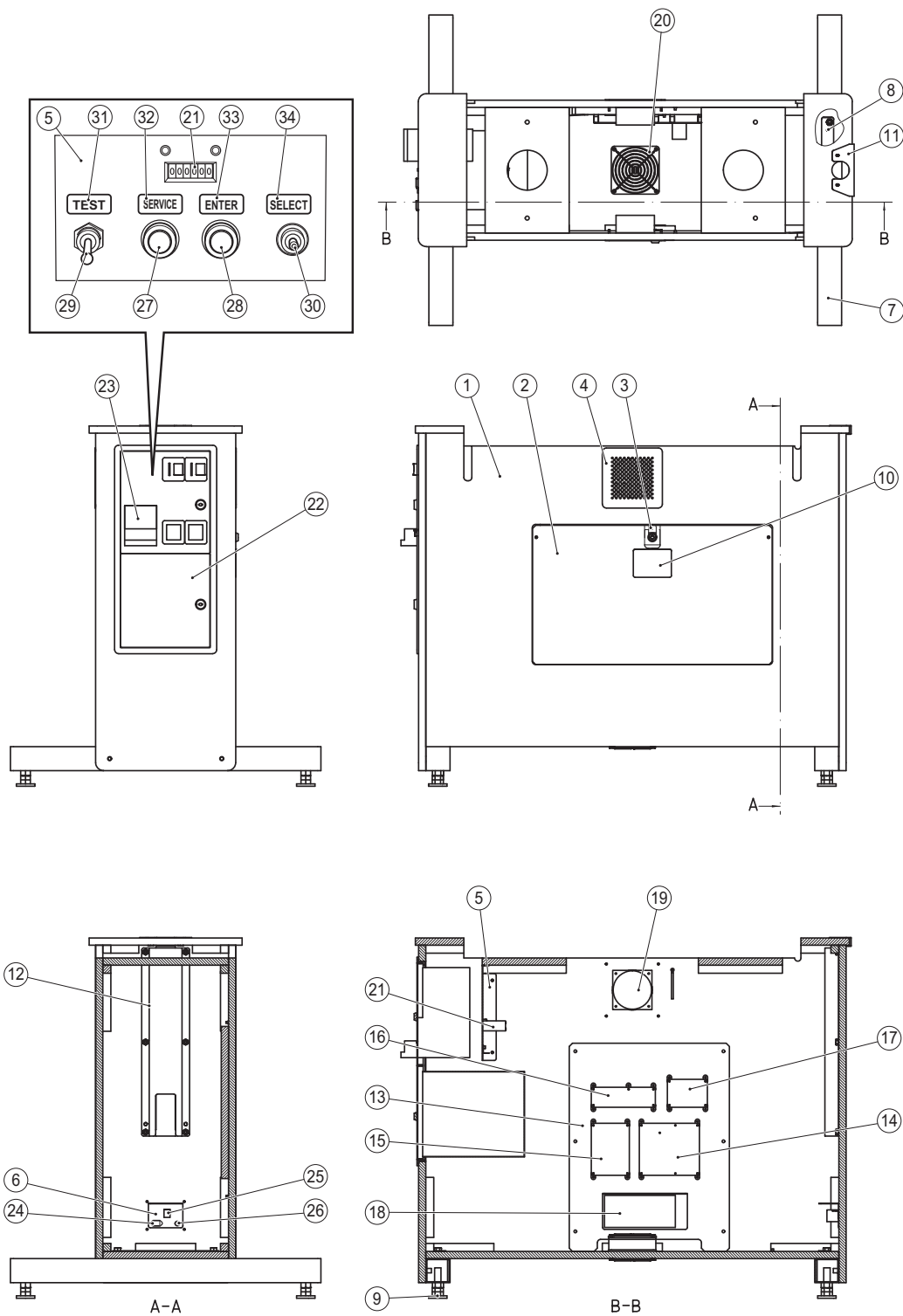
No.	Name	Qty.	Type and rating	Part No.
1	Top board	1		PG63-13433-00
2	Monitor glass	1		PG99-13397-00
3	Money in sticker	1		PG40-13420-00

## 10-2 Middle Box assembly



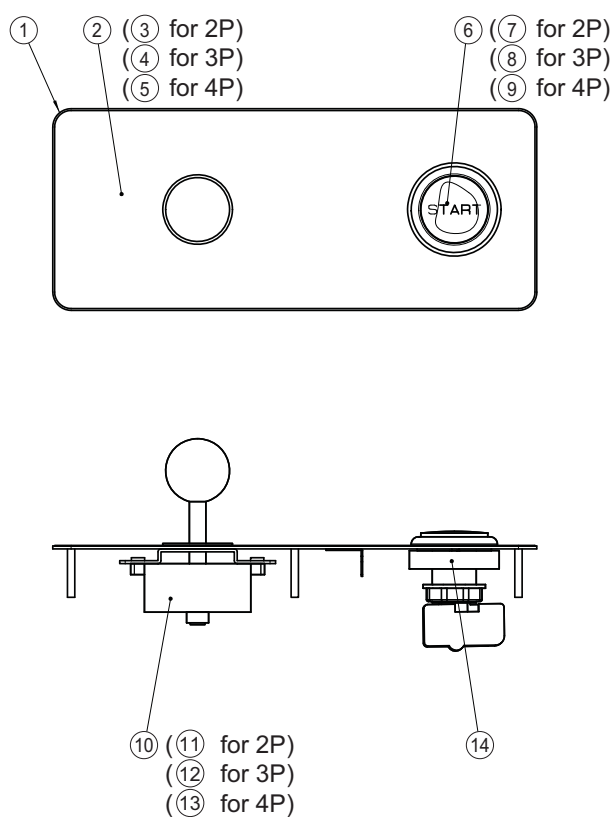
No.	Name	Qty.	Type and rating	Part No.
1	Middle box	1		PG63-13433-01
2	Monitor bracket	2		PG10-13407-00
3	32" LCD Monitor	1		VG85-13741-00

## 10-3 Under Box assembly



No.	Name	Qty.	Type and rating	Part No.
1	Under box	1		PG63-13433-02
2	Side service door	1		PG63-13433-03
3	Service door lock	1		
4	Seaker grill(SC-100)	2		PG90-13448-00
5	Service panel	1		PG10-13412-00
6	Cord plate	1		VG10-09494-00
7	Under leg frame	2		PG10-13410-00
8	Under leg support	2		PG10-13402-00
9	Level adjuster	4		VG20-04938-00
10	Label, Warning Maintenance	1		VG44-12423-00
11	Under box side cover	1		PG10-13416-00
12	Signboard pillar support	1		PG10-13409-00
13	PCB base	1		PG63-13433-04
14	MAIN PCB	1		PG03-13391-00
15	I/O PCB	1		PG03-13392-00
16	A.I. PCB	1		PG03-13393-00
17	AMP PCB	1		RB05-11517-00
18	Power Supply(PS-301)	1		VG88-13450-00
19	Speaker	2		VG54-12904-00
20	Fan motor	1		VG55-07827-00
21	Coin meter	1		VG83-13196-00
22	Coin door Assy	1		VG83-13398-00
23	Bill accepter		(optional)	ICT-Model
24	Noise filter	1		VG78-12947-00
25	Power switch	1		VG53-04683-00
26	Fuse	1	5A 250V	
27	Push button RED	1		VG53-09641-00
28	Push button GREEN	1		VG53-09641-01
29	Toggle switch(SPST)	1		VG53-12702-00
30	Toggle switch(SPDT)	1		VG53-12703-00
31	Label, Service panel "TEST"	1		VG44-02702-00
32	Label, Service panel "SERVICE"	1		VG44-02702-01
33	Label, Service panel "ENTER"	1		VG44-02702-11
34	Label, Service panel "SELECT"	1		VG44-02702-07

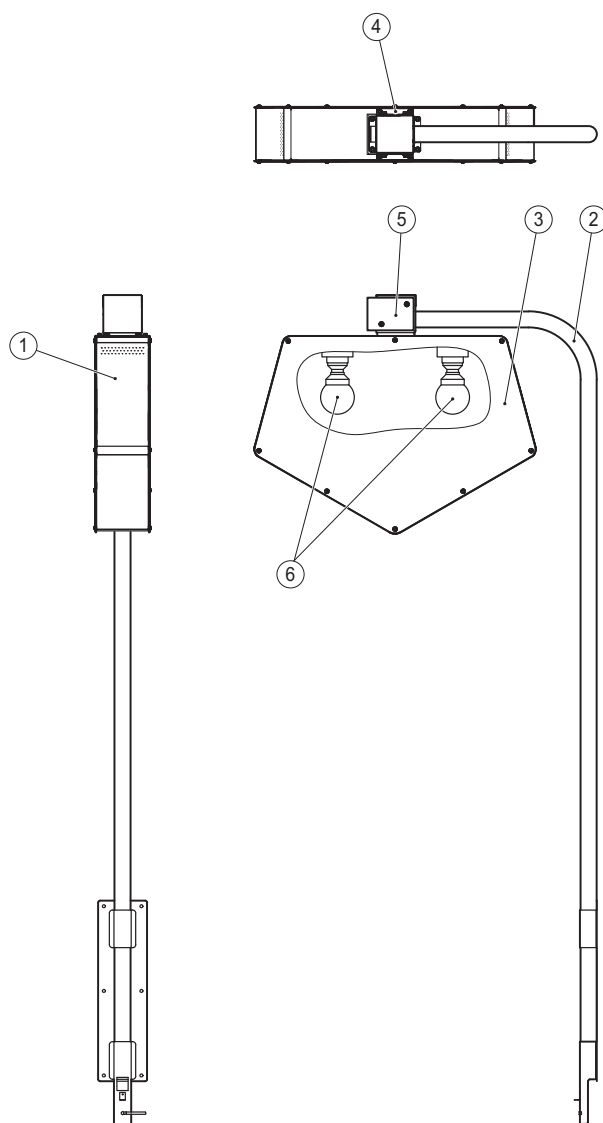
## 10-4 Control Panel assembly



No.	Name	Qty.	Type and rating	Part No.
1	Control Panel	4		PG10-13411-00
2	Decal, Control Panel 1	1	YELLOW	PG40-13421-00
3	Decal, Control Panel 2	1	PINK	PG40-13421-01
4	Decal, Control Panel 3	1	LIGHT BLUE	PG40-13421-02
5	Decal, Control Panel 4	1	RED	PG40-13421-03
6	Decal, Button ST 1	1	YELLOW	PG40-13422-00
7	Decal, Button ST 2	1	PINK	PG40-13422-01
8	Decal, Button ST 3	1	LIGHT BLUE	PG40-13422-02
9	Decal, Button ST 4	1	RED	PG40-13422-03
10	Joystick 1	1	YELLOW	VG80-11244-00
11	Joystick 2	1	PINK	VG80-11244-01
12	Joystick 3	1	LIGHT BLUE	VG80-11244-02
13	Joystick 4	1	RED	VG80-11244-03
14	Illuminated switch	4		VG80-11112-03

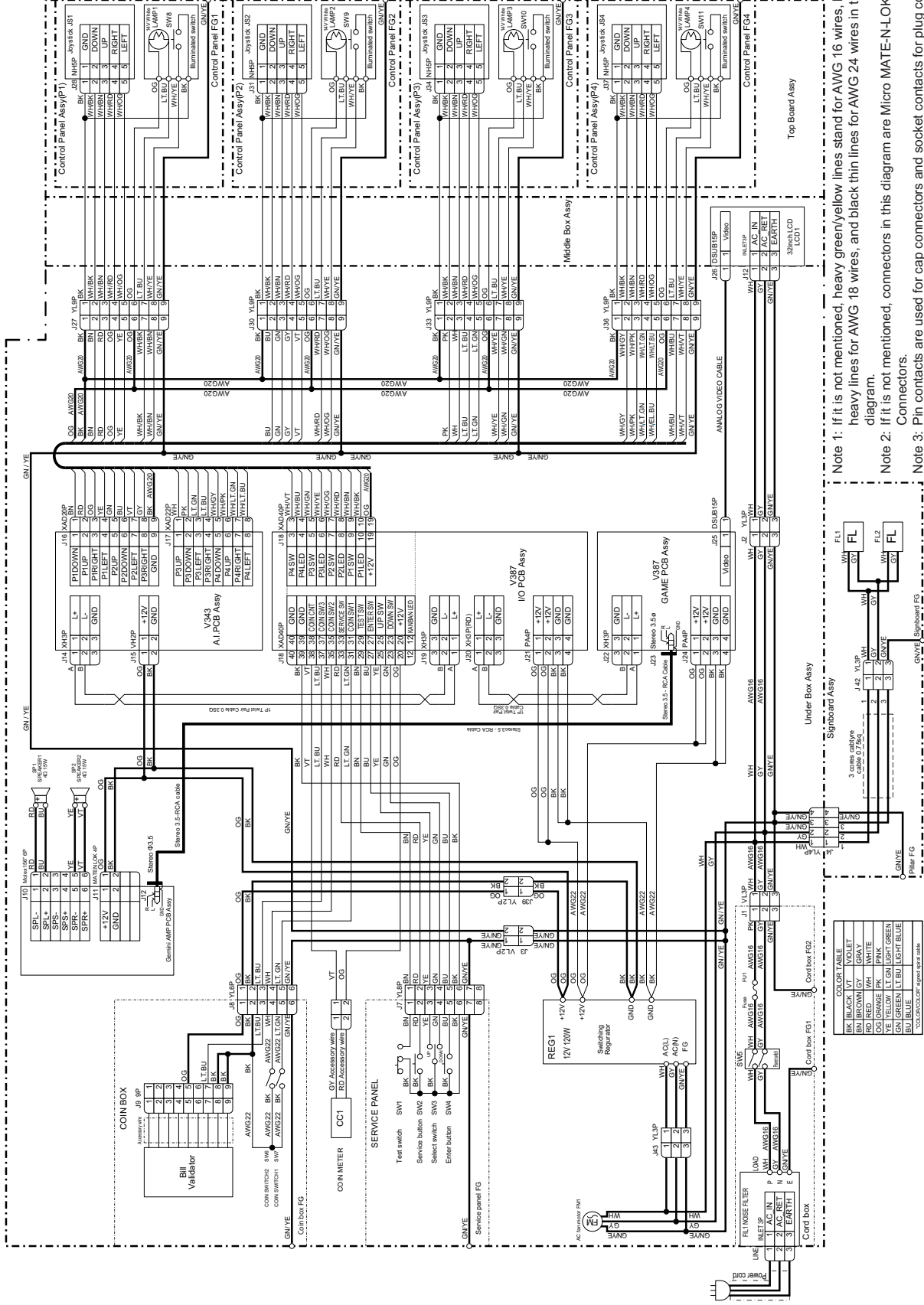


## 10-5 Signboard assembly



No.	Name	Qty.	Type and rating	Part No.
1	Signboard frame	1		PG10-13414-00
2	Signboard pillar	1		PG10-13413-00
3	Signboard panel	2		PG95-13423-00
4	Signboard bracket	1		PG10-13401-00
5	Signboard bracket cover	1		PG10-13406-00
6	Fluorescent lamp(FL-SCREW IN)	2		PG57-13349-00

# 11. WIRING DIAGRAMS



## WIRING HARNESS PARTS LIST

DRAWING #	CONNECTOR	SPEC.
26669201 HARNSS, UNDERBOX WIRING # 1	J44	XA2P-C
	J7	YL9P-P
	J8	YL6P-C
	J33	YL9P-P
	J30	YL9P-P
	J16	XAD20P-P
	J17	XAD22P-P
	J36	YL9P-P
	J27	YL9P-P
26669202 HARNSS, UNDERBOX	J39	YLP2P-P
	J15	VH2P-P
	J21	PA4P-P
	J24	PA4P-P
	J11	COMERCIAL MATEN LOCK 4P-P
26669203 HARNSS, UNDERBOX	TERMINAL	12V_1(2.3)
		GND_1(2.3)
	J1	VL3P-P
	J2	YL3P-P
	J3	VL2P-P
26669204 HARNSS, COIN DOOR	J4	YL4P-P
	J43	YL3P-P
	TERMINAL	FM 1
	J8	YL6P-P
	J9	9P-C
26669205 HARNSS, AC	TERMINAL	COIN SW 1
		COIN SW 2
		COIN BOX FG
	TERMINAL	AC PLATE
		NOISE FILTER
26669206 HARNSS, AC		MAIN SW
	J14(J20)	XH3P-P
	J19(J22)	XH3P-P
	J7	YL8P-P
	TERMINAL	SERVICE
26669207 SERVICE PANEL ASY.		TEST SW
		ENTER SW
		SERVICE PANEL FG
	SOLDER	SELECT SW

DRAWING #	HARNESS,	CONNECTOR	SPEC.
26669208	HARNESS, SPEAKER	J10	MOLEX .156 GP
		TERMINAL	SPEAKER1
			SPEAKER2
			YL9P-C
		J28(J31,J34,J37)	NH6P-P
		TERMINAL	12V
26669211	HARNESS, CONTROL PANEL		SW 1
			SW 2
			GND
			CONTRAL PANEL FG
26669212	HARNESS, UNDERBOX WIRING # 4	J43	YL3P-C
		TERMINAL	SWITCHING REGULATOR(L,N,FG)
26669213	HARNESS, UNDERBOX WIRING # 5	J44	X42P-P
			COUNTER
26669214	HARNESS, AC PLATE ASY. # 3	J1	YL3P-C
		TERMINAL	POWER SW SW5
			FUSE FU1
			POWER SW SW3
			AC PLATE FG2
26669221	HARNESS, MARQUEE	J42	YL3P-P
		TERMINAL	LAMP FL1
			LAMP FL2
			MARQUEE FG
26669222	HARNESS, PILLAR	J4	YL4P-C
		J42	YL3P-C
		TERMINAL	PILLAR FG
26669231	HARNESS, POWER SUPPLY.	J12	AC PLUG
		J2	YL3P-C





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